

Grounding Social Ecology: Landscape, Settlement, and Right of Way*

By George Martin

The renewal of the earth and of the human settlement upon it would be the greatest human enterprise since the Neolithic.¹

1. Introduction

At the turn of the 21st Century, the whole range of landscape — rural and urban, domesticated and wild — is put at risk by an escalating privatization and individualization of movement.² Salient in this encroachment is an auto social formation.³ At its extreme, as in the

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¹Kevin Lynch, *Good City Form* (Cambridge, MA: The MIT Press, 1981), p. 317.

²Data sources: American Automobile Manufacturers Association, *Motor Vehicle Facts and Figures*, Detroit (annual), *World Motor Vehicle Data*, Detroit (annual); European Conference of Ministers of Transport, *Trends in the Transport Sector, 1970-1995*, Paris; Federal Highway Administration, *Highway Statistics Series*, Washington, DC; Texas Transportation Institute, *Urban Roadway Congestion*, College Station, 2001; Transport 2000, *Vital Travel Statistics*, London; United Nations, *Urban Agriculture: Food, Jobs, and Sustainable Cities*, New York, 1996; US Department of Commerce, *Statistical Abstract of the United States*, Washington, DC (annual); US Department of Transportation, *1995 Nationwide Personal Transportation Survey*, Washington, DC; World Resources Institute, *World Resources 2000-2001: People and Ecosystems*, Washington, DC.

³There are, of course, motorized vehicles other than the car — the bus, truck, and motorcycle. I write of an auto social formation because of the

US, an auto social formation is a rapacious consumer of landscape, and it fosters a traffic of aggravated competition, in which everyone's right of way is routinely challenged — drivers by numbing congestion and commuting, cyclists and walkers by the forbidding infrastructures of automobility. The spatial creep linked to an auto social formation penetrates the farms, forests, and villages at the fringes of urban settlements and the parks, plazas, and neighborhoods at their hearts. Beyond settled landscape, wilderness areas are scarred by a relentless invasion of motorized vehicles. More generally, the primeval socioecological practices underpinning the vitality of all settlement, cultivating and walking, are diminished by the landscape appetites of cars and their traffics.

Movement takes place in socially organized settlement landscape.⁴ The modes of locomotion through landscape — walking, motoring, etc. — constitute sociomaterial patterns; traffic is such a pattern. The social organization of landscape is not merely an arena in which movement takes place; it customizes movement. Our travels — their modalities and experiences — are materially *and* socially conditioned and expressed. The growing conflict over right of way epitomizes the sociomateriality of movement: Roads are becoming contested terrains. The grounds for these contests comprise the most vital public landscape in our settlements.

As a result of social and material pressures stemming from intense car use, the polities of settlements are struggling to allocate finite public landscape among increasingly competitive interests. Among these interests are campaigners for both environmentalism and

sheer numerical domination of road transport by cars. They represent about three-quarters of all vehicle registrations and about seven-tenths of all vehicle miles in the US and in the world. Also, the word “auto” connotes individualized movement, in whatever vehicle. The popularization of light trucks that are used as cars supports the inclusion of trucks as part of an auto social formation.

⁴While an auto social formation refers to land transport, it is linked to air and water transport. Airport infrastructures, including their roadway approaches, are significant consumers of some of the most desirable settlement landscape. Thus, airports increasingly have become contested terrains around the world. Across the US in 2000, more than 650 local groups were actively trying to curb airport construction (David W. Chen, “Regional Airports in Growth Phase,” *The New York Times*, October 24, 2000, p. A1). As to water transport, much of it is devoted to the reproduction of auto social formations — petroleum and vehicles account for a substantial portion of ship cargoes. Finally, auto, airplane, and ship transport share a common fuel source.

environmental justice. The newest of the new social movements resist the intensified and socially divisive consumption of landscape that is featured in global economic restructuring. This consumption, rooted in carbon-based transport, comprises the income stream for the world's dominant transnational corporations — those in the automotive and petrochemical sectors — accounting for six of the ten largest transnational corporations (TNCs) in 1999.

An auto social formation is a platform for the emerging global political economy, which is driven by another round of time and space compression — in the turnover of commodities, in the reach of the corporation, and in the locations of workers, materials, and markets. Increased automobility, especially in the form of light trucks and vans, is a significant part of this restructuring for it supports one of its principal pillars — outsourcing. Simultaneously, the crystallization of an auto social formation is diffusing local landscape conflicts and escalating global environmental problems. An auto social formation is, then, where the global political economy comes to ground.

2. The Auto Social Formation

An auto social formation is socially and materially embedded in auto-centered transport systems.⁵ In the US an auto-centered transport system was constructed in the years after World War II; its pillar is the Interstate Highway Act of 1956. The vast Interstate Highway System, comprising over 40,000 miles of multi-lane, limited access roadway, is reputed to be the largest engineering project in human history — the biggest piece of built environment ever. Despite its cross-country and rural image, it has its greatest use and sociomaterial impacts in metropolitan settlement.

As an auto-centered transport system develops, it becomes the infrastructure for an auto social formation, which constitutes not only vehicles, roads, and drivers, but congestion, settlement sprawl, and so on, as well. The *expanded reproduction* of this auto social formation by an immense complex of auto-oil-construction firms is as fundamental an economic force behind the universalization of capitalism today as are the telecommunication and computer “revolutions.” This economic nexus, coupled with state regimes, generates the most powerful actors in the world's political economy, and the most important forces in the degradation of landscape. The consumption involved in an auto social formation has consequences across the whole range of society and

⁵See Peter Freund and George Martin, *The Ecology of the Automobile* (Montreal: Black Rose Books, 1993).

ecology — for the quality of habitats, the social justice of the mobility afforded to citizens, and the vitality of built and social environments.

The auto social formation represents a new level of car use — hyperautomobility⁶ — that developed in the US in the late 1980s and early 1990s.⁷ It is characterized by more individualistic car use, both extensively, for example, sprawl; and intensively, for instance, bigger vehicles driven more miles with fewer occupants. The structures of an auto social formation are inextricably interwoven — they are built (roads), *and* social (policing), *and* natural (in their interactions with fauna and flora, with the ground, air, and water). Traffic interacts with natural topographies to create signature habitats, including exurbs, strips, and malls.

The auto social formation is now a determinate architectural *and* ecological influence on settlements and it impacts social ecology in unique and powerful ways — in its segregations, severances, privatizations, massive scales, and large footprints. This formation is also complicit in civilization’s ongoing encroachment on wild nature, as it penetrates, subdivides, and shrinks the territories of undomesticated biota, especially at the edges of urbanized settlements. Here, it is apparent that an auto social formation is not just about intense *car* driving. It is accompanied by an explosion in the use of all form and manner of individualized, motorized off-road transport — snowmobiles, dune buggies, All-Terrain Vehicles, mountain motorcycles, and swamp buggies.

An auto social formation creates a generic settlement landscape configuration that lacks diversity. This has been widely recognized to be the case with architecture and aesthetics — especially in the mass produced and consumed suburban settlements of post-World War II America. However, it is also true for the natural environment. The landscapes of automobilized sprawl feature a consistency of flora and fauna. Unwanted roadside flora (“weeds”) are relentlessly extinguished, while “road kill” is the price that animals pay for violating car space. Additionally, the milieus of automobility/sprawl are often “transported landscapes” — accenting exotic biota to the disadvantage of natives.

⁶See George Martin, “Hyperautomobility and Its Sociomaterial Impacts” (Guildford: Centre for Environmental Strategy, University of Surrey, Working Paper Series, 1999).

⁷Other nations in the North are moving towards auto social formations. However, the US stands apart: It leads its closest competitors in per capita vehicle consumption by about 25 percent. Significantly, these other nations maintain much more *diversified* transport systems than does the US.

Currently, the leading developments of the auto social formation are two-fold: sprawl across the range of settlement, and larger vehicles. Cars have declined steadily since the 1980s as a share of private vehicles in the US, from 80 percent in 1977 to 64 percent in 1995, while larger vehicles have grown from 17 percent to 34 percent. By 2000, over one-half of vehicle sales were light trucks, including Sports Utility Vehicles, vans, and pick-ups. While built on the frames of light trucks they are used as cars. It is in their designation as light trucks that SUVs evade the Federal regulatory regime governing fuel consumption and air pollution. Everything about these light trucks is, in fact, “heavy” — larger profit margins for the auto industry; more bulk on the road, blotting out the horizon for others; greater fuel consumption and pollution; more use of resources such as ores; and greater risk in accidents.⁸ SUVs are mobile advertisements testifying to society’s unwillingness to deal forthrightly with excess consumption. They are a contemporary parallel to the conspicuously consumed lawns noted by Thorstein Veblen;⁹ a difference is that the mobility of SUVs makes them omnipresently insufferable. They are the icon of the auto social formation.

Driving alone. The mass popularity of an auto social formation lies in part in its individual and private *appearance*. Car travel promotes a subtle form of false consciousness — in E.P. Thompson’s words, it fosters “the illusion of self-motivated freedom” and “disempowers people from confronting the determinism of the larger social process.”¹⁰ But the car is about more than ideology. An auto social formation is also widely accepted because its sociomaterial infrastructures inhibit or prevent alternative modes of movement, including more *social* forms like trains or bikes. Thus, it fosters a pattern of *habitual* driving, which in itself is a socializing force.

⁸It is ironic that SUVs result in little or no safety improvement for their occupants. This is because they are more likely than other cars to roll over, and because their drivers are greater risk-takers — perhaps because of their erroneous sense of invulnerability. See Peter Freund and George Martin, “Risky Vehicles — Risky Agents: Mobility and the Politics of Space, Movement, and Consciousness,” in J. Peter Rothe, ed., *Moving the Margins of Traffic Safety: Content Over Packaging* (Edmonton: University of Alberta Press, 2002).

⁹Thorstein Veblen, *The Theory of the Leisure Class* (New York: Macmillan, 1899).

¹⁰E.P. Thompson, “Last Dispatches from the Border Country,” *The Nation*, March 5, 1988.

The new level of automobility in the US since the 1980s is documented by data from the National Personal Transportation Survey:

<u>Per Household:</u>	<u>1977</u>	<u>1983</u>	<u>1990</u>	<u>1995</u>
Number of vehicles	1.59	1.68	1.77	1.78
Vehicle trips (000)	1.44	1.49	2.08	2.32
Average vehicle trip length (miles)	8.35	7.90	8.85	9.06
Vehicle occupancy per trip (persons)	1.90	1.75	1.64	1.59

While more analysis is necessary (because car use is sensitive to business cycle fluctuations), the circumstantial case for a new level of automobility beginning in the mid-1980s is strong, coincident with the surge in light truck purchases. It is supported by other research; for example an analysis of changes in carbon dioxide emissions.¹¹ The next NPTS will not be concluded until late in 2002, but other data indicate continued growth in automobility after 1995. The Highway Statistics Series of the Federal Highway Administration show increases of 14 percent in vehicle miles and 10 percent in vehicle registrations between 1995 and 2000 (while the population increased by 9 percent in the same period).

Apparently, the intensification of automobility is being led by women drivers, who are coming closer to the level of driving done by men.¹² This is consistent with changes in the distribution of trip purposes in an auto social formation. The fastest growing category of trips is “transport work,” which consists largely of chauffeuring non-drivers and of servicing vehicles. Thus, a big reason for intensified automobility in an auto social formation is more trips by women to suburban schools, garages, malls, and so on. Also, while the share of trips to and from work has declined, their length has increased sharply — by 36 percent between 1983 and 1995. In these and other ways, settlement sprawl is strongly implicated in the increases in driving and in driving alone.

Road congestion is associated with driving alone. Americans spent an average of 36 hours sitting in traffic in 1999, up from 11 hours in

¹¹T.R. Lakshmanan and Xiaoli Han, “Factors Underlying Transportation CO² Emissions in the U.S.A.: A Decomposition Analysis,” *Transportation Research* 2, 1997, pp. 1-15.

¹²See Don Pickrell and Paul Schimek, “Growth in Motor Vehicle Ownership and Use: Evidence from the Nationwide Personal Transportation Survey,” *Journal of Transportation and Statistics*, May, 1999, pp. 1-17.

1982. As private vehicle use individualizes mobility, it emphasizes the car to the exclusion of other movement modalities. Sprawl greatly reduces the possibility of using these other modes, or of car-pooling. Thus, the great majority of travelers move by car, many alone and at the same time. The auto social formation has developed unevenly in the US. The Sunbelt has been its most hospitable locale, and it is also the locale experiencing road congestion most intensely. Traffic congestion data for US cities in 1997 showed that Los Angeles headed the list. Of the 20 most congested cities, 14 were in the Sunbelt.

Landscape consumption. The car is a greedy user of landscape. Its operation requires *multiple, dedicated* sites. This means that a single car has several allocated spaces — at home, work, and shopping sites, in particular — that are not compatible with other uses. When they are not being used by cars, they are vacant. Cars demand more landscape than other forms of movement by astounding multiples. The per capita land take for car travel is 10 times that of travel on a bus, 13 times that on a bike, 17 times that on a train, and 60 times that on foot. One might assume that the greater devourer of land in settlements is housing — not so! In Germany, road transport “occupies 60 percent more land than the total for all housing purposes.”¹³ In Manhattan, about 45 percent of land is devoted to moving, servicing, and storing vehicles; in Los Angeles, over 60 percent.

The eco-inefficiency of the car is especially true for landscape:

As usage rates increase, many public services get more eco-efficient; private ones get less so. For example, the more people use an urban public transport system, the higher its occupancy rates, the denser the services and connections can become. The more people drive, the more cars obstruct each other and the less reliable bus services become: an outcome visible daily on the streets of London.¹⁴

One measure of the extensive landscape consumption of automobilized sprawl is the differential between population and land growths. At the high end of sprawl, the Los Angeles metro area’s population grew by 45 percent between 1970 and 1990, while its land area grew by a whopping 300 percent.

¹³Maf Smith, John Whitelegg, and Nick Williams, *Greening the Built Environment* (London: Earthscan, 1998), p. 103.

¹⁴Roger Levett and Ian Christie, *The Richness of Cities: Urban Policy in a New Landscape* (London: Comedia and Demos, Working Paper 12, 1999), p. 13.

The auto social formation has a large and growing impact not just in metro areas, but upon all landscape. In rural settlement, more vehicular traffic expropriates more landscape: roads are widened and by-passes are built. Yet, congestion still spills over to secondary and tertiary roads. Country lanes in the English home counties have become increasingly difficult to navigate for their customary users — walkers, cyclists, equestrians, farm vehicles, and livestock. Wilderness landscape, as noted earlier, is increasingly impacted by motorized vehicles; it is also effected through the backward linkages involved in the reproduction of an auto social formation. A plurality of the oil that flows around the world, in pipes, ships, and trucks, is destined for motor vehicles; on its way from more and more remote drilling rigs, it degrades a growing portion of wilderness landscape. Another way in which the backward linkages of an auto social formation impact landscape is road construction: “Roadbuilding is disruptive of the natural environment and requires large quantities of stone, aggregate and bitumen, the extractions of which generate their own negative environmental effects.”¹⁵ Thus, an auto social formation is doubly material intensive—of both landscape and energy: “This means that the trend towards increased car use has had very significant impacts on the material intensity of transportation services.”¹⁶

The landscape consumption of an auto social formation subtracts from other uses, including greenbelts, farms, parks, pathways, and forests, because landscape is for all practical purposes finite. The US Department of Agriculture reports that the loss of farmland and forest to settlement has quickened — land was converted at a rate of a little over three million acres a year from 1992 to 1997, more than *double* the rate from 1982 to 1992. The infrastructures and traffic of an auto social formation spill into adjacent public spaces, rendering them more difficult and dangerous to use. For example, vehicles routinely cross sidewalks (on frequent pavement cuts leading to parking lots and driveways); it is a constant irritant and danger to walkers and cyclists. While vehicles are allowed to cross sidewalks, walkers can be arrested for infringing on streets (“jaywalking”). To add insult to injustice, a growing reaction to the pressure on movement landscape in settlement centers is to erect barricades which channel and restrain foot traffic —

¹⁵Kenneth Button and Werner Rothengatter, “Global Environmental Degradation: The Role of Transport,” in David Banister and Kenneth Button, eds., *Transport, the Environment and Sustainable Development* (London: E and FN Spon, 1993), p. 24.

¹⁶Tim Jackson, *Material Concerns: Pollution, Profit and Quality of Life* (London: Routledge, 1996), p. 137.

despite the fact that vehicles already receive about four times the allocation of movement landscape that walkers do.¹⁷ The landscape takings of an auto social formation impact all citizens, not just walkers and cyclists. There are many examples of the consequent degradation of the public landscapes that sustain community and ecological health. In Chicago, the site that the landmark Burnham Plan had denoted to become the civic heart of the city is now the location of its most elaborate roadway interchange. North of New York City, exurban and rural sprawl is endangering water quality in the city's reservoirs.

Of all its impacts, an auto social formation has its greatest consequences upon right of way; it makes a contested terrain of roads, sidewalks, and paths.

3. Right of Way

Human settlements began as centers of both movement and habitation — with paths between structures; these remain its most enduring and widespread material legacies. Paths were probably our first built environments, and they are integral to all human environments. Our lives today follow many of the same paths as those of our ancient ancestors. Now, as then, we move to live. Thus, perhaps the most distinctive attribute of an urbane civilization is the claim that all citizens have upon its streets — their “right to the city.”

A striking characteristic of right of way is its resistance to commodification. Private roads are the exception to the rule. At the heart of right of way is the use value of public landscape, through which the universal necessity to move about is exercised. This public landscape is the heart and soul of sociocultural life in settlements: “The roads, paths and squares that allow movement impact on the network of social connections and activities, and are the *main* ingredient of the public realm and therefore a key expression of urban art and culture.”¹⁸ While roadways lie in the public realm, the means of travel are both public and private. As private car use has expanded under an auto social formation, it has come to dominate the public right of way.

While car technology is a grand achievement of our movement crafts, car use has a decidedly contradictory impact upon movement. At the same time that it provides new qualities and quantities of mobility, the ways in which the car is being used negates other movement modes

¹⁷See William H. Whyte, *City: Rediscovering the Center* (New York: Doubleday, 1988).

¹⁸Hugh Barton, *Sustainable Communities: The Potential for Eco-Neighbourhoods* (London: Earthscan, 2000), p. 97.

that are more socially beneficial, individually healthful, and ecologically sound. So, as an auto social formation devours landscape, walking is marginalized. Like trees and gardens, walkers require generous dollops of landscape, especially in and near the densely populated centers of settlements. These are the places where the built environment is its most extensive and the social environment is its most intensive. City centers, what sociologists since the Chicago School have called Central Business Districts, attract the greatest number and density of people on the move.¹⁹ They are, then, also Central Walking Districts. As such, they merit treatment as public outdoor rooms with agreeable street furniture for people who are on foot. Walkers are a diverse lot with varied landscape needs. They are often accompanied by their own non-motorized wheeled vehicles — strollers for children and small carts for shopping.²⁰ Sidewalk widths, as well as amenities like comfortable rest and toilet facilities, should reflect this variety of use — but they rarely do.

The sidewalk ends at the outer reaches of built-up settlements. The typical locales of an auto social formation — exurbs and gated communities — notably lack amenities for anyone who is not in a car; even the most rudimentary sidewalk or roadside path is often missing. In the countrysides, roads have been given over entirely to cars; without paths these areas are dangerous and noxious for walkers. There are locales where walkers retain access to countryside paths. In Europe, these paths are legacies of a medieval right of way — a time when cars did not exist, and when the commons did. In the UK, modern rights of way have their roots in the English Enclosure Acts of the 1700s; they were intended to maintain public access while landowners carved up the countryside.²¹ Today, private landowners increasingly poach on public right of way. The result is a re-igniting of old class conflicts: “The re-emergence in the 1990s of a fierce debate over access — its use as a means of destabilizing ideas of private property, and the State’s legislative response that makes illegal the spatial practices of certain groups — shows that landscape still functions as a repository of group

¹⁹See Robert Park, Ernest W. Burgess, and Roderick D. McKenzie, *The City* (Chicago: University of Chicago Press, 1925).

²⁰Moreover, walkers are joined on sidewalks by riders — those in wheelchairs and small motorized carts. Although I am concerned with walkers, it is worth pointing out that walking is not universal among human populations, and that it is not continuous across human life spans.

²¹See Valerie Belsey, *Discovering Green Lanes* (Totnes, Devon: Green Books, 2001).

identity which under particular circumstances barely, if at all, masks class antagonisms.”²²

“*Me first!*” All claims to right of way now face more challenges — drivers confront each other on roads and parking lots, walkers and cyclists contend with vehicular traffic and fewer pathways, hikers find their paths blocked by fences. Right of way skirmishes, queues, tailbacks, crushes, and jams are manifestations of this competition. New terms have been coined to describe the new competition — for example, “gridlock” and “road rage.”

We humans have probably contested right of way for as long as we have been social. One can imagine hunter-gatherers competing for trail access to food and water. In more recent times, right of way was contested before the car arrived; horse-drawn carriages challenged walkers. However, there is a great disparity between walkers and cars, compared to walkers and carriages. Walkers are today outnumbered and their share of right of way has declined. As Jane Jacobs noted: “We went awry by replacing, in effect, each horse on the crowded city streets with half a dozen or so mechanized vehicles, instead of using each mechanized vehicle to replace half a dozen or so horses.”²³ In addition to their greater number, motorized vehicles are much larger and faster — and hence more intimidating — than horses and carriages.

The individualization and privatization dynamic in an auto social formation promotes the atrophy of social landscape, and a subsequent attenuation of public life.

The current development process generally does not build commonly owned public spaces, particularly pedestrian-scale spaces. The main public space in most of the new communities developed over the past generation is privately owned retail space, spread out in miles of “strip centers” and malls.²⁴

Shopping malls are private landscapes and they erode the key principle in the vitality of right of way — democratic access. Contemporary right

²²Wendy Joy Darby, *Landscape and Identity: Geographies of Nation and Class in England* (Oxford: Berg, 2000), p. 283.

²³Jane Jacobs, *The Death and Life of Great American Cities* (Baltimore: Penguin, 1965), p. 343.

²⁴Christopher B. Leinberger, “Metropolitan Development Trends of the Late 1990s: Social and Environmental Implications,” in Henry L. Diamond and Patrick F. Noonan, eds., *Land Use in America* (Washington, DC: Island Press, 1996), p. 210.

of way is often exclusive: Major roads are nearly impossible (as well as illegal) to walk; carriageways were neither. A recent UK Parliamentary report concludes that successive politicians and planners have treated walkers with contempt:

In a myriad of ways when we walk we are treated with less respect than when we drive. We are corralled behind long lengths of guard railing, forced into dark and dangerous subways and made to endure long waits at pedestrian crossings.²⁵

In an auto social formation, landspace is continuous and seamless for motorized vehicles but not for other modes of movement. Thus, it is not uncommon to have to take a motorized vehicle simply to get across a road — for example, to cross a limited access road that lies athwart a hotel and a meeting site. In these situations, a traveler is reduced to getting into a vehicle in order to cross the road. In such ways, an auto social formation impels the most dedicated walker to board a vehicle for the shortest of journeys.

Conflict over right of way not only occurs on roads. The growing pressure on settlement landspace occasioned by hyperautomobility affects all sorts of movement. Alongside the Regents Canal in London, fishers, walkers, runners, and cyclists vie for a quite narrow tow path. Ostensibly, this example does not implicate the car, but in fact illustrates its impact. The tow path is the only practical route to get from point A to point B in North London (for example, from Islington to Paddington) on foot or cycle without dealing with dangerous and noxious car traffic. While motorists have a wealth of routes, and others take coaches or tube lines, the options for walkers and cyclists are quite limited. They end up competing with each other for crumb-sized pieces of landspace. Right of way conflict is also growing in wilderness areas in the UK and the US; in the waters of the Lake District, it is rowers versus motor boats; in the Grand Canyon, it is helicopters versus hikers.

The social guarantee behind right of way is access — access to the necessary and the desirable sites of human activity. A public right of way is essential to any society with democratic aspirations. So, privatization of public right of way is more than a nuisance, more than a disagreeable by-product of affluence — it is a challenge to society's ability to manage the tension between private interest and public good,

²⁵Tania Branigan, "Walkers 'treated with contempt,'" *The Guardian*, June 30, 2001, p. 13.

between the haves and have nots. The contradictions of access created by an auto social formation are based in its greedy and socially divisive consumption of landspace; it is a political as well as an ecological problem.

4. Landspace Conflict and Social Justice

Democratic right of way is a matter of social justice. A publicized example of this occurred in the US a few years ago.²⁶ A young woman was hit and killed by a vehicle as she crossed a heavily-trafficked road that lay between her bus stop and the shopping mall that was her destination. The woman was poor, black, and a resident of the inner city, while the mall was in a white, middle class suburb. The mall had prevented public buses from entering its premises in order to take on and discharge passengers because its owners did not want trade from inner city residents. While anecdotal, this case brings to life two facts: The obstacles to access created in an auto social formation are consequential, and they are not randomly distributed within populations.

Because today's roads are of greater scales and have greater traffic densities than previously, they are more likely to separate areas that are proximate, dividing adjoining neighborhoods as well as separating neighborhoods from gardens, parks, and forests. An auto social formation begets virtually impregnable barriers for walkers, especially children and the elderly.

Communities are often divided by major infrastructure developments, especially in residential urban areas, which can result in social fragmentation. While some elements of the adverse effects this has on local environment are encapsulated in such things as accident statistics and the state of the local atmosphere, there are also often significant social implications in terms of the quality of life which segmented communities can enjoy.²⁷

In the 1970s, Donald Appleyard conducted research that demonstrated the negative impacts of road traffic on local communities.²⁸ He found more friendliness and involvement among residents of streets with light traffic; more isolation and alienation along streets with heavy traffic.

²⁶David W. Chen, "Suit Accusing Mall of Racism over Bus Policy Settled," *The New York Times*, November 18, 1999, p. B11.

²⁷Button and Rothengatter, *op.cit.*, p. 42.

²⁸Donald Appleyard, *Livable Streets* (Berkeley: University of California Press, 1981).

An auto social formation *universalizes* heavily trafficked roadways — not only in city centers, but in urban neighborhoods, suburbs, and villages. In the process, community life based in the use of local public landscape suffers. Community is a place — a special location denoted by its characteristic social, natural, and built features. An auto social formation promotes placelessness — “the casual eradication of distinctive places and the making of standardized landscapes.”²⁹ Edward Relph’s analysis of the cause of placelessness — that it results from the coupling of mass cultural values with the mantra of technical efficiency — admirably suits automobility.

The severances created by broad and heavily trafficked roads contribute to social isolation, particularly among the most mobility-disadvantaged: the poor, the elderly, the disabled, and the very young. The built environments of metropolitan settlement feature elevated roads, surface streets, and parking lots, many of which are inhospitable to foot traffic. Mike Davis has argued that freeways serve as moats separating racial and class territories in Los Angeles.³⁰ New Urbanism architect Peter Calthorpe has noted that, “the auto allows the ultimate segregations in our culture — old from young, home from job and store, rich from poor and owner from renter.”³¹ In some cases, workers may be separated from potential jobs because an auto social formation eliminates access for those who do not have cars. Thus, poor people get poor access.

The social justice deficits of built environments that emphasize the auto also have been noted in cities in the UK:

Poor people, and disadvantaged communities, often get penalised twice. Not only do they have to live with fewer economic resources, they often — indeed almost always — live in environments which exact an additional toll on their well-being, through being unhealthier, less accessible, and literally more expensive places in which to survive. The poor are more likely to live on inner city estates where overcrowding, high traffic densities, and lack of amenities are more common.³²

²⁹Edward Relph, *Place and Placelessness* (London: Pion, 1976), p. 141.

³⁰Mike Davis, *City of Quartz: Social Struggles in Postmodern Los Angeles* (London: Verso, 1990).

³¹Peter Calthorpe, “The Post-Suburban Metropolis,” *Whole Earth Review*, Winter, 1991, p. 51.

³²Ken Worpole, *In Our Backyard: The Social Promise of Environmentalism*

The fact, then, is that the ills involved in an auto social formation are not distributed in a democratic fashion. Its liabilities (isolation, accidents, heavy pollution and traffic) accrue disproportionately in districts where disadvantaged groups live. Thus, coincident with its emergence in the US is growing local activism around transport, social justice, and civil rights.³³ The auto social formation is now an arena for some of the leading struggles for social justice — in both the environmental *and* environmental justice movements.

5. The Newest New Social Movements

Conflicts over landspace allocation have resonated throughout history. In each phase of capitalist development, resistance arises when landspace undergoes major appropriations to new levels of private exploitation. For example, in the late 19th Century, Victorian “eco-warriors” waged battles over the enclosure of common land to the north and south of London, where new roads were being built and private development was burgeoning.³⁴

The social injustices of an auto social formation have created contested terrains within which new protest has emerged across a broad front — in urban, rural, and wilderness areas. Conflict over the use of public landspace is at the heart of these popular protests by activists of various stripes — environmentalists, walkers, cyclists, consumers, cultivators, ravers, squatters. They display in new forms and new ways; their colors are a palette of reds, greens, and blacks. The theatres are diverse as well — city streets and brownfields, village roads, cyberspace, countryside fields, and old-growth forests.

New groups devoted to landspace issues blossomed in the early 1990s in the US and the UK, including Alarm UK, Critical Mass, Earth First!, The Land is Ours, and Reclaim the Streets. They are new social movements because of their orientation to consumption as a social justice issue; they are “new” NSMs because of their focus on public landspace, especially auto-dominated landspace. Some of the new NSMs link landspace and transport issues directly to the politics of class and race. For example, the Labor/Community Strategy Center in Los Angeles (through its Bus Riders Union) challenges the underfunding of public bus transport upon which poorer workers depend.

(London: Green Alliance, 2000), p. 9.

³³See Robert D. Bullard and Glenn S. Johnson, *Just Transportation: Dismantling Race and Class Barriers to Mobility* (Gabriola Island, BC: New Society, 1997).

³⁴Antony Taylor, “Victorian Eco-Warriors,” *History Today*, 48, 1998, pp. 5-8.

One of the best known of the new protest groups is Reclaim the Streets. RTS began in a squat against the extension of a major road through a working class community in East London: “RTS’s global impact has been as formidable as it was unexpected for this band of idealists, who first came of age in 1993 when a loose collective of ravers, anticar activists and squatters converged on Claremont Road in London’s East End, which was scheduled to be demolished to make room for an extension of the M11 motorway.”³⁵ Creative confrontation, small-group lateral networking, and community-building are hallmarks of newer NSMs. At a typical RTS action, a major street is blockaded to traffic for an afternoon and evening to conduct a street carnival, featuring several music and food venues, children’s sandboxes, clowns, and the like. Cars are provided for participants to stone. Some people discuss and argue transport issues in small groups; others collect signatures for a petition or hand out literature. There is a large banner strung over the street with the message, “Liberate Space,” for all to see. The entire spectacle is an illegal act. The RTS cadre get hundreds of people to the site and the street barricaded before the police can arrive in force. By then it is too late — thousands of people have streamed in from all over the city, alerted by radio DJs. The police are reduced to observation because intervention after the fact would require an unacceptable level of force. Some of the tactics developed by RTS, especially the use of the Internet as its “office,” have been adopted by international struggles against global capitalism.

Landspace and right of way issues have a potential to unite and invigorate the constituencies of environmentalism and environmental justice because, while an auto social formation doubly discriminates against poorer people, it is also a principal contributor to global warming, and a growing threat to wilderness areas. The environmental and environmental justice movements can find common ground in many causes associated with an auto social formation — opposing its widespread sprawl, backward linkages, congestion, visual blight, and community severances.

There are significant bridges between the new land-space-oriented protest and the social ecology of settlement. Right of way is not only about democratic access to public land-space. It is also a vital connection among the social, built, and natural environments. This is no better illustrated than by the age-old social practices of walking and cultivating, both of which are at risk in an auto social formation.

³⁵John Ghazvinian, “Dancing in the Streets,” *The Nation*, April 24, 2001, p. 23.

6. Walking and Cultivating

An auto social formation fosters a hierarchically structured and regulated landscape, and ironically (given the claims that the car embodies freedom) furthers the penetration of the state into the spatial contexts of everyday life. Automobility is, after all, the most regulated activity of our daily lives — illustrated not only by state departments of motor vehicles and by traffic laws, police and courts, but also by traffic signals and statutes against jaywalking. An auto social formation can be seen to impact the experience of movement in the same way in which clocks impact the experience of time. “Clock time has been associated with control and discipline, while natural time or biological time has been associated with freedom and leisure.”³⁶ As an auto social formation develops, then, it becomes a sociomaterial regulatory regime for public landscape. Walking, traditionally associated with natural time and with freedom, is relegated to subaltern status.

Walking as contrarian. As walking becomes marginalized it takes on a contrarian sensibility. Use of the very term “walker” contravenes conventional social usage, in which people are walkers (and hikers) only in the countryside; in cities, the same people become pedestrians, a term with a decidedly double meaning. In an auto social formation, walking becomes banal — an instrumental activity: “Nothing is more indicative of this change than the debased functionality of walking when it was relegated to the meaningless status of a repetitive exercise for the sake of stress reduction, calorie expenditure, and cardiovascular fitness.”³⁷

Walking is contrarian because it can “pose a challenge to social tendencies that accentuate forms of domestication or domination,” and more than other forms of mobility, it reveals the “authoritarian features of urban architecture.”³⁸ Walking rubs against the grain of car traffic. It is seen by many drivers (and planners) as an impediment to vehicle traffic flows. It also rubs against the grain of time allocation in contemporary work schedules. To walk, then, is to contest standard land and time use: “The decline of walking is about the lack of space in

³⁶Randi Hjorthol, “Gendered Aspects of Time Related to Everyday Journeys,” *Acta Sociologica*, 44, 2001, p. 30.

³⁷Gary Roberts, “London Here and Now: Walking, Streets, and Urban Environments from Donne to Gay,” in Michael Bennett and David W. Teague, eds., *The Nature of Cities: Ecocriticism and Urban Environments* (Tucson: University of Arizona Press, 1999), p. 53.

³⁸David Macauley, “Walking the City: An Essay on Peripatetic Practices and Politics,” *CNS*, 11, 2000, p. 4.

which to walk, but it is also about the lack of time — the disappearance of that musing, unstructured space in which so much thinking, courting, daydreaming, and seeing has transpired.”³⁹ That the act of walking is increasingly subversive in contemporary landscapes should come as no surprise; it often has been associated with political action. When workers go on strike, they “walk.” In post-World War II Paris, the situationists made walking the essential practice in their radical existential urbanism: “By moving in unexpected ways the situationists wanted to divert and disturb the planned pathways of efficient mass circulation and disdain consumer spectacles.”⁴⁰

Walkers, however much they are aggrieved, are not a “natural” political constituency. While most people walk, many walkers in the nations of the North drive (and ride in cars) as well. It is also the case that the offenses committed against walkers tend to be subtle:

The theft by motorists of safe autonomous movement from a generation of children, and of public space, safety and tranquillity from us all, was too diffused in space, time and perpetrators to be recognised and resisted as a crime. And now that most law-abiding citizens drive, and can’t in the short term avoid doing so, such an adjustment in perspective would be nearly impossible.⁴¹

A group that campaigns for walking is Britain’s Ramblers Association. It manifests an old tradition: The practice of protecting the social use value of right of way by exercising it — a common theme across the history and scope of environmentalism. The Sierra Club was founded in California in 1892 by John Muir, a Scottish immigrant and a legendary walker: “Walking in the landscape had long been considered a vaguely virtuous act, but Muir and the club had at last defined that virtue as defense of the land.”⁴² The Ramblers have focused on the traditional interest that walkers have in the countryside. However, at the same time that footpaths are under increasing pressure from landowners in rural areas, hundreds of urban paths are being closed by development. By way of resistance the Ramblers Association and the Open Spaces Society mobilize public enquiries, law suits, and direct action to defend public

³⁹Rebecca Solnit, *Wanderlust: A History of Walking* (New York: Viking, 2000), p. 259.

⁴⁰Jane M. Jacobs, “Trails,” in Steve Pile and Nigel Thrift, eds., *City A-Z* (London: Routledge, 2000), p. 265.

⁴¹Levett and Christie, *op.cit.*, p. 19.

⁴²Solnit, *op.cit.*, p. 150.

right of way in cities and suburbs.⁴³

Like walking, cultivating is negatively impacted in an auto social formation. In rural settlements, where private farming is the dominant human activity, there is increasing traffic caused by car commuters who own first or second homes in the “country.” California’s Central Valley, a breadbasket of the US, lost almost 100 square miles of farmland to development between 1988 and 1998. There is another way in which intense automobility endangers cultivation. A recent UK study reports that vehicle exhaust fumes are cutting crop yields by up to 20 percent, and suggests that white clover and oilseed rape in particular are being devastated.⁴⁴ In urban settlement, schemes of public land cultivation such as allotments and community gardens are endangered. Urban allotments and gardens require space not only for the tracts themselves, but also for convenient access by foot for their cultivators. Both the plots and the paths are imperiled in an auto social formation.

Cultivating as contrarian. Agriculture is the most extensive of all human constructions of Second Nature, and it has been an indispensable feature of urban settlements since their beginnings some 10,000 years ago. Contemporary urban agriculture covers a wide range of activity, including aquaculture, orchards, and crops grown in back yards, on vacant lots, on allotments, and on small suburban farms. Worldwide, urban agriculture is estimated to provide some one-third of humanity’s food; it is universally practiced — in the North as well as in the South. Much of it is practiced on public landscape. Allotment systems provide citizens with small parcels from public lands to cultivate, within walking distance of their homes. Like right of way, this is a historical legacy of the medieval commons in Europe. In England, when common land was enclosed, ordinary people struggled for centuries until they were able to force Parliament to enact the Smallholdings and Allotments Act of 1908.

In the US in particular, the auto social formation is bequeathing a landscape and a lifestyle inimical to agricultural and to social well-being. As it consumes and degrades land, land becomes dead to the world: “Paved-over, built upon, badly eroded or otherwise degraded land is considered to have been ‘consumed’ since it is no longer biologically productive.”⁴⁵ A writer who grew up in the rolling hills of Sonoma

⁴³Robert Mendick, “Anger as hundreds of urban paths disappear under the bulldozer,” *The Independent*, June 3, 2001, p. 12.

⁴⁴Martin Wainwright, “Traffic fumes could cut crop yields by 20%, study suggests,” *The Guardian*, June 8, 2000, p. 11.

⁴⁵Mathis Wackernagel and William Rees, *Our Ecological Footprint:*

County, California, north of San Francisco, has published a funeral sermon for the open grasslands there which have been covered with the infrastructures of automobilized sprawl. The elegy reads, in part: “We are here to pay our last respects to a piece of the earth that will not die, but sleep beneath concrete, waiting to breathe again.”⁴⁶

A prominent example of the social use value of urban cultivation and its politicization is the recent flowering of community gardens. These gardens are typically sited on abandoned lots owned by and neglected by city governments. The lots are often located in poorer districts. Over the last decade, many have been adopted (squatted) by local residents and developed as gardens. They have become a material focus and a rallying point for community social life. They range from the simple to the elaborate; all are open to the public at large. Some specialize in flowers, others in vegetables; many feature furniture, sculptures, and other works by local artisans.

Community gardens illustrate a fusion of the landscape and ecological issues in the new NSMs. An example from London is The Land is Ours, which occupied a brownfield site on the Thames River in 1996:

Activists moved prefabricated structures on to the land — including structures to house communal debate, make-shift dwellings, and compost toilets. Large quantities of compost were moved on to the site so gardens could be constructed and planted, enabling vegetables to be grown healthily and successfully on land which was concreted over and potentially still contaminated.⁴⁷

In New York City, hundreds of community gardens were put under threat of eviction by the Giuliani regime. The Giuliani case was not without merit: returning the gardens to the private sector would put them back on the tax rolls, and would provide an opportunity to build much-needed low-cost housing. Such contradictions in the disposition of public landscape are ubiquitous in contemporary settlements. Public landscape is being squeezed among competing social uses — affordable

Reducing Human Impact on the Earth (Gabriola Island, BC: New Society, 1996), p. 75.

⁴⁶Daveena Tauber, “A Funeral Service for Land Buried by Sprawl,” *Afield*, 5, 2001, p. 17.

⁴⁷Dave Featherstone, “The ‘Pure Genius’ Land Occupation: Reimagining the Inhuman City,” in *Possible Urban Worlds: Urban Strategies at the End of the 20th Century* (Basel: Birkhauser Verlag, 1998), p. 123.

housing, parks, cultivating, walking, and trees. Meanwhile, the larger (by far) consumer of city landscape — the private car — is hardly an agenda item for local government. Parking lots are not likely to be on any city government’s eviction list.

Trees, like cultivating and walking, do not sit well in auto-dominated landscape and regularly get “evicted.” Thus, for example, in the summer of 2001, the French Minister of Agriculture proposed chopping down the ancient plane and poplar trees lining many of his country’s rural roads, made globally familiar by photographs (including Henri Cartier-Bresson’s in Brie in 1968) and paintings. The minister reasoned that the trees caused accidents because if they were not there, drivers would not crash into them. In the language of his ministry, the trees are “anomalous lateral obstacles.”⁴⁸

Walking and cultivating as pleasing and healthful social practices. Second Nature, including both settlement and agriculture, are venues in which humanity structures its fundamental, quotidian relations with First Nature: Nutrition and locomotion.⁴⁹ A common theme of an auto social formation in all of its impacts is that it calls into question the organic socioecological relationships that accumulate among society, nature, and the built environment. Much that is significant about human endeavor involves an interaction of natural and built environments; few activities illustrate this so as well as walking and cultivating. Both today are identified as pastoral activities, but they have a toe-hold in urban settings. Both are ways to maximize the ecological and the social health of cities. Both are acts of pleasure and health — whether undertaken in city or country, suburb or wilderness, alone or with companions.

We can appreciate the complex ecological features of landscapes from different mobile perspectives — savoring the textured details by foot at human speed, or biking just above the earth’s surface with the wind and sun caressing us, or moving by car speed as panoramas reel through our windshields, or flying at unearthly speed, snatching glimpses of continental formations and the rounded shape of the earth through airplane portholes, or ranging between near and far vistas as we glide along at water level on train or boat. Cultivating plants, too, has its pleasurable connections to First Nature — rewards of taste, touch, and smell: massaging the pungent, damp earth while setting plantlings on a dewy spring morning; picking a tomato off its vine on a brilliant

⁴⁸Editorial, “Driving around the bend,” *The Guardian*, July 7, 2001, p. 21.

⁴⁹See Thomas Jahn, “Urban Ecology — Perspectives of Social-Ecological Urban Research,” *CNS*, 7, 1996.

July day and eating it on the spot. This great variety of sensual and organic appreciation of our environments is shrinking. When we move about today, at least in the North, many of us, much of the time, experience the world while buckled up in the seats of cars. When we eat, we are unlikely to know the origins of our food, much less to have had an organic connection to its production.

Movement by car and by foot differ in many intrinsic ways — for example, speed and complexity. One of these ways is in the experiences of sociomaterial space they afford. Car travel is not done in human rhythm but in machine rhythm, and its virtues are not bodily ones.⁵⁰ Car traffic does not operate at human scale or with human texture:

We have factored the time and space dimension of the automobile into our intuitive understanding of urban form, size, scale, and order, but that does not eliminate our basic need to perceive the city in terms related to our bodies: the size of our bodies, our capacity for upright movement, our visual perception, our range of hearing. We are keenly aware of these faculties when we are not encapsulated in a car....The invention of the motor vehicle...has introduced a scale of reference that bears little relationship to human perception of urban space, detail, order, and scale.⁵¹

The domination of daily movement by machine scale and texture reverberates through a wide range of social life — in physical fitness and public health, for example.

Travel by foot has the advantage of being active and organic: “Walking itself is the intentional act closest to the unwilling rhythm of the body, to breathing and the beating of the heart.”⁵² It can be pleasing and healthy at the same time.

Walking, cycling, or jogging can be encouraged for reasons of health and enjoyment. The arbitrary division that our culture makes between work and pleasure appears in transportation, just as it does elsewhere. Any comparative measurement of access

⁵⁰See George Martin, “Earthly Places: A Social Ecology of Settlement” (Santa Cruz: Center for Political Ecology, University of California, unpublished, 2001).

⁵¹Norman Crowe, *Nature and the Idea of a Man-Made World* (Cambridge: The MIT Press, 3rd Ed., 1999), p. 225.

⁵²Solnit, *op.cit.*, p. 5.

must account for the benefits of moving, as well as just arriving.⁵³

Walking, then, affords that rare possibility for movement in today's world: getting somewhere in a way that is enjoyable and salubrious, as well as being environmentally sound.

As walking is marginalized, physical fitness becomes more problematic. A 1998 government report in the UK concluded that walking is the most “natural activity and the only sustained dynamic aerobic exercise that is common to everybody except for the seriously disabled or frail.”⁵⁴ In his discussion of settlement form, Kevin Lynch included the need for consonance between spatial organization and the human body: “The setting should encourage the active use of the body, so that no parts of the body degenerate for lack of exercise.”⁵⁵ In contemporary settlements, much of daily travel is functional activity; for example, in the form of the commuting “grind.” An auto social formation expands this functionalization of movement, making car use routine in daily life — for shopping, recreating, visiting, going to school, as well as for commuting to work.

Cultivation, especially small-parcel cultivation, is also an active social practice and one that blends seamlessly with walking. Cultivators often walk to and from their plots; in addition, the work of cultivation requires a great deal of walking about. The landscape and time requirements of walking and cultivating are not compatible with the compressions of time and space that underlie contemporary economic restructuring. Both are marginalized — pushed aside by the profitable commodity production of the industrial agribusiness and auto-oil sectors. Their survival lies in the wider popularization and the political mobilization of contrarian social practices.

7. The Politics of Settlement Landscape and Movement

Neither greens nor reds have given sufficient attention to the auto social formation, a unique juncture of environmental and social justice issues, at both the local and planetary levels. At the same time that new local problems are being generated, global ones are compounded. Auto use is fast becoming the single most important component of global warming. Between 1980 and 1995 the share of worldwide carbon dioxide emissions generated by the US motorized transport sector rose from 6.8

⁵³Lynch, *op.cit.*, p. 194.

⁵⁴Keith Harper, “British walking rates show a marked decline,” *The Guardian*, June 18, 1998, p. 7.

⁵⁵Lynch, *op.cit.*, p. 122.

percent to 7.2 percent, *despite* technological improvements in emission controls. (In the same period, US industry's share of emissions declined.)

Regulatory regimes so far have been unable to constrain the development of an auto social formation. In the US, the Intermodal Surface Transportation Efficiency Act of 1991 is the Federal answer to the need for a post-Interstate Highway System regulatory regime. So far, its environmental potential has been stymied by the road-building and auto-oil industries (with their slogan of "keep America moving"), and by a belief that new technologies can overcome the liabilities of an auto social formation. These new technologies include surveillance cameras and traffic control centers, driver information systems, and remote vehicle identification systems. While they can regulate traffic flow, they can not reduce it. Meanwhile, they add to the growing list of intrusive regulatory and technological penetrations into individual privacy.

Local governments are doing no better in resolving the contradictions of an auto social formation. Now, when local government is being called on to manage escalating automobilized sprawl and to oversee a socially just disposition of landscape, it is proving incapable of meeting the test. For example, probably the most developed local regulation of sprawl in the US is in Portland, Oregon, but even there vehicle miles continue to rise, and the metro area ranks 12th among US cities in traffic congestion (considerably above its rank in population). One major contradiction at the local level stands in the way of containing an auto social formation:

On the one hand, measures aimed at reducing traffic congestion or infrastructure costs, or improving the aesthetic quality of urban areas, are appealing. On the other hand, measures that are seen to limit land supply and potentially cause housing prices to increase are unappealing, particularly to those seeking to expand the stock of affordable housing.⁵⁶

The residual obstacle, then, is the private market, which becomes even more susceptible to monopoly exploitation by landowners and developers under any containment regime. "Today, urban green space is a primary battleground not necessarily because it is green, but because it is rare, public space, and thus the investment home of a variety of

⁵⁶Arthur C. Nelson, "Effects of Urban Containment on Housing Prices and Landowner Behavior," *Land Lines*, May, 2000, p. 1.

interested claims.”⁵⁷ This contradiction impacts progressive struggles as well. Pitting public gardens against more affordable housing reinforces the class distinctions that divide the environmental struggle. Giuliani’s assault on community gardens in New York City behind a political message of “we need these lots to develop affordable housing” split some community groups there. Ultimately, it may be impossible for community gardens to flourish without sufficient community housing.

A reason for an auto social formation’s staying power is that its sociomaterial infrastructures are firmly embedded within local communities. Car use, in its expansiveness and concreteness, is a wonderful testament to the ability of a sociomaterial structure to serve its own reproduction. Another reason for the lack of sufficient resistance to the auto social formation in the US is its gradualness:

Yet today there is no national outcry about land use. Locally, controversies do erupt over siting of unpopular facilities — landfills, billboards, group homes, airports, new highways, and so forth. More often than not, however, office parks, shopping centers, and subdivisions creep into existence with little fanfare. They may consume a lot of farmland at the urban fringe, they may be nondescript or even ugly, yet they generate little protest. Gradual changes to the landscape make it difficult to catch the attention of people bombarded with environmental and other alarms, only some of which have had a direct impact on them.⁵⁸

The gradual and piecemeal consolidation of the auto social formation is being resisted today in an ad hoc format. Perhaps this is inevitably the case — in part because landscape issues, echoing the old adage about all politics, are local.

8. Conclusion

An auto social formation is a pivotal structure for promoting higher levels of individual and private consumption of landscape, and for the decentralizing imperative of current economic restructuring. At the same time, intense automobility accelerates the degradation of nature and of the communal features of local society. Additionally, it is inefficient for capital accumulation because it produces congestion (and other social costs) — thereby making it a growing friction in the

⁵⁷Andrew Ross, “The Social Claim on Urban Ecology,” in Bennett and Teague, eds., *op.cit.*, p. 22.

⁵⁸Henry L. Diamond and Patrick F. Noonan, “Healthy Land Makes Healthy Communities,” in Diamond and Noonan, eds., *op.cit.*, p. 50.

circulation of commodities and the access to workers.

An auto social formation is a contradictory and a robust component of the new global economy. In this way settlement landscapes are grounding locales for a variant of the second contradiction of capitalism — between its forces of production, the auto-oil-construction complex, and its socioecological conditions of *consumption*, an auto social formation.⁵⁹ The routinization of armed conflict in the Middle East, rooted ultimately in the control of immense petroleum resources, manifests both the strategic importance and the global contradictions of intense automobility. In terms of political ecology, the auto social formation represents what Andrew Biro and Roger Keil call “the material form of existence of the socioeconomic and ecological practices which structure capital accumulation.”⁶⁰

The disposition of landscape has been a concern of environmentalism since its beginnings in the conservation and preservation movements over a century ago. One analyst has argued that the new environmentalism of the second half of the 20th century, at least in the US, was rooted in the uncontrolled spread of suburbia in the decades after World War II.⁶¹ At the turn of the 21st century, we are witnessing an intensification of metropolitan expansion. Popular reaction to this paving-over of more and more landscape has fostered a new interest among environmentalists in public control over private development. At the same time, the environmental justice movement resists the market’s siting of ecological risks in poor communities and the neglect of public transit. Meanwhile, new NSMs have emerged to challenge the automobilization and privatization of public landscape, especially right of way.

An overarching structural feature of our growing landscape wars is the expansion of capitalism into culture and nature; the auto social formation is a leading edge of this expansion. Yoked with the ongoing globalization of economy, an auto social formation’s commodification and privatization present growing threats to the use values and social practices that sustain settlements. This threat is not only to nature “out

⁵⁹See Peter Freund and George Martin, “The Commodity that is Eating the World: The Automobile, the Environment, and Capitalism,” *CNS*, 7, 1996; James O’Connor, “Capitalism, Nature, Socialism: A Theoretical Introduction,” *CNS*, 1, 1988.

⁶⁰Andrew Biro and Roger Keil, “Sites/Cities of Resistance: Approaching Ecological Socialism in Canada,” *CNS*, 11, 2000, p. 91.

⁶¹See Adam Rome, *The Bulldozers in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001).

there” in the form of the loss of wilderness, habitats, and species; it is also a threat to nature “in here,” in the form of the erosion of right of way, gardens, allotments, paths, farms, trees, and all the public amenities that are the social hearts of settlements.

While the landscape problems generated by an intensification of automobility and metropolitan sprawl are hot issues in the North, their impacts may be worse in the South.⁶² Many metro areas in the South, for example, Mexico City, face even greater congestion, pollution, and landscape degradation than do metro areas in the North. Transnational auto and petrochemical corporations are in a heightened worldwide competition for new markets for their land and carbon-intensive version of transport. Auto-centered transport is exported to a South that is unprepared and unendowed to deal with its huge ecological and public health costs.

Meanwhile, cultivators and walkers have yet to make their mark as new NSMs. We await the popularization of what David Macauley calls “peripatetic politics.” It may be the case that walking is too diffuse an activity, and small-plot cultivating a too archaic one, to serve as bases for mobilization. However, a potential remains — for in the end, the fact of the matter is that “private property and public space are always at stake in the walk.”⁶³ Any potential politics of settlement walking and cultivating will expose the need for land redistribution, as well as a need to re-democratize public right of way.

The fact that the contradictions of auto social formations are deeply rooted in political economy and social organization mitigates strongly against their resolution by managerial and technical means.⁶⁴ Both government and the auto-oil-construction nexus prefer technocratic means to the extent that they acquiesce to any reforms of auto social formations. The development of Intelligent Vehicle Highway Systems is an example. However, neither the management of road traffic nor the adoption of more environmentally friendly vehicles will address the

⁶²See Peter Freund and George Martin, “Driving South: The Globalization of Auto Consumption and its Social Organization of Space,” *CNS*, 11, 2000.

⁶³Macauley, *op.cit.*, p. 24.

⁶⁴Similarly, the New Urbanism in architecture is too narrow in its scope to resolve the contradictions of auto social formations, for example, through the design of less auto-dependent communities. Thusfar, the products of the New Urbanism are residential boutique communities — suburban, small, and pricey (see Ute Angelika Lehrer and Richard Milgram, “New (Sub)Urbanism: Countersprawl or Repackaging the Product,” *CNS*, 7, 1996). However, whatever its limitations as a tool of change, the New Urbanism offers a needed alternative vision to that of the auto social formation.

central problem of landscape consumption. We have seen already that technological advances in fuel efficiency and emission control have not significantly reduced petroleum consumption or air pollution. This is because improvements in individual vehicles are counterbalanced by the presence of more vehicles that are driven more miles. Thus, managerial and technical innovation may regulate congestion and landscape consumption but they can not contain it — not as long as daily transport continues to be increasingly individualized and privatized. And, of course, any such regulation will *not* address the landscape-related environmental justice deficits of an auto social formation.

The problems of the auto social formation and its technologies lie in their social usage. In much the same way that resolution of the impacts of development upon environments lies not in controlling population growth but in the introduction of a different political economy and social organization, resolution of the contradictions of auto social formations lies in their reconfiguration — not in managerial or technological control of individual vehicles and drivers. This reconfiguration calls for the wedding of a red settlement politic with a green settlement ecology. Such a red-green marriage can produce a social ecology that takes in the whole vista of settled landscape, that is dynamic and dialectical rather than static and holistic, that makes public health as compelling as preservation, and that takes settlement as seriously as it does nature.⁶⁵ The fact is that an auto social formation creates contested terrains that offer a potential for both red and green politics. For this potential to be realized, both facets of red-green politics have to work through the dualistic antipodes of city and country, society and nature, that are promoted by neoliberal and conservative environmental politics.

Reconstruction of the auto social formation, then, is a major article in the order of the day for red-green politics. There is no better practice on which to ground social, political, and ecological rejuvenation than the ways in which we move through our earthly places.

⁶⁵For several relevant articles on the limits and potentials of urban ecology approaches, see the June, 1996 (Vol. 7), issue of *CNS*.