

Trumpeter (1990)

ISSN: 0832-6193

ENERGY, COMMUNITY, AND THE NATURAL WORLD

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Trumpeter

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Barring the discovery of something like functioning cold fusion or a way to burn coal cleanly, the odds are that fairly soon the world will have to get along on a good deal less energy than it is now using. It is the contention of this essay that a transition to a lower energy culture, while entailing a wrenching adjustment period, would in the long run prove a boon both for everybody's relationship to the natural world and for general social well-being.

Global stocks of oil are due to run out in some thirty or forty years. Well before that happens the indigenous stocks of the major industrial powers will have disappeared. American reserves, for example, have less than ten years to go. A few years after they have vanished, Britain's North Sea wells will peter out, as will those in the Soviet Union. <sup>1</sup> By that time all oil-dependent countries will be competing for dwindling and increasingly expensive stocks owned by OPEC countries. Presumably, there will not be enough oil to go round, even for those countries with enough foreign exchange to buy it.

The future availability of oil may not, on the other hand, be the real issue. As this is being written, the conclusions of the United Nations' Intergovernmental Panel on Climate Change are being leaked. <sup>2</sup> The unanimous belief of this leading group of scientists is that global warming is on its way and that we may expect a rise in global temperature of up to 1.5 degrees centigrade within the next thirty years. To stabilize the carbon dioxide content of the atmosphere at its present level will mean reducing today's carbon emissions anywhere from 50

Assuming — perhaps unrealistically — that governments worldwide will move toward a low-energy society quickly rather than court disaster in the future, we are looking at a scenario in which, with fossil fuels playing only a minor role, energy is derived from solar, hydroelectric, wind, geothermal, hydrogen and biomass sources. For various reasons nuclear power is expected to have at best a small place in the energy picture. <sup>3</sup>

While the major multinational companies will undoubtedly struggle to extend to the alternative energy sources the control they now have over much of the fossil fuel structure, their chances of success are limited, since it is the almost unanimous opinion of specialists in the alternative energy field that most alternative techniques are decentralizing in nature.

In such a world the private car, whether run on oil, batteries, hydrogen, methane, or photovoltaics, will have a limited role and will be confined mainly to the cities. Priority in the use of oil will be given to public transport, trucks, and the

machines which drive the agricultural sector.

In a world of this kind large cities will undergo radical transformations. Today's megacities will certainly have to be downsized. When tall buildings such as New York's World Trade Center demand as much energy as a city of 100,000 the writing is on the wall for such leviathans. We know that a city of one million can be maintained on human and animal energy alone. London was the first western city to reach that size, which it did in the first decade of the nineteenth century, but only by keeping open spaces of a rural nature within its confines where food could be grown and pigs and chickens kept. The artist John Constable spent the last years of his life there and could always find landscapes to paint within walking distance of his home. Although the big cities of the next century will dispose of a good deal more energy than Constable's London, and no one today knows just how big they can remain, there is no question of their being anything like today's size. A good deal of thought has already been given to both their downsizing and their "greening", as evidenced by the recent publication of a book of essays by forward-looking theorists titled *Green Cities*.<sup>4</sup>

The downsizing of cities in general may well be a major factor of life in the next few decades. Even with today's abundant energy it seems impossible to keep up the infrastructure of cities and the roads connecting them. Felix Rohatyn, a former member of the U.S. Congress' National Economic Commission, estimates that just making essential repairs to America's present infrastructure of roads, bridges and watermains would cost \$2 trillion.<sup>5</sup>

This suggests that many intercity roads will be abandoned, essential ones being kept mainly for truck and bus traffic. A resurgence of railroads, which are by far the most energy efficient modes of transport, is a virtual certainty.

Cities will be smaller and more compact, the high costs of transport making far-flung suburbs and exurbs uneconomic. Megacities, to use Lewis Mumford's phrase, are parasites, sucking the nutrients from countrysides for hundreds of miles around. In a low-energy culture where the expense of moving goods long distances will often be prohibitive, small cities will live in a healthy symbiotic state with their nearby regions.

There exists an impressive array of data suggesting that in almost every way life in small cities can be more satisfying and enriching than it is for most people in megacities. This has been amply documented by Kirkpatrick Sale in his book *Human Scale*.<sup>6</sup> Sale, incidentally, quotes the architect and town planner Paul Goodman as saying as early as 1977 that, "It requires no stretch of the imagination to believe that from the point of view of conservation economics the future belongs to compact cities in the 50,000 to 150,000 range."<sup>7</sup>

We have, then, the probability that at least in the industrialised countries there will not only be a population shift from large cities to small ones, but also

a restricted, high- cost energy supply that will inhibit the easy movement of people inside cities and between cities.

While such a trend would seem regressive to some, a strong argument can be made that it could heal many present sicknesses in our social fabric and at the same time reduce the alienation of humankind from the natural world, much to the benefit of both.

That there is something profoundly amiss with that fabric there can be little doubt. In 1987, for example, a pair of teams from the U.S. National Institutes of Mental Health reported, "mounting evidence suggesting that among people born between the war and now, the incidence of common psychiatric disorders is far more widespread than it was in previous generations," implying that, "an ominous trend may be present leading to a broad spectrum of disorders in the coming decades." 8 The veteran American politician David Lebedoff evidently spoke for many when he wrote in 1980 that, "People seem to be losing their sense of kinship with one another...everyone knows something is wrong." 9

Several obvious causes of this trend come to mind, such as the looming threat of atomic annihilation and the pace of change in modern life; yet it is difficult to resist the suspicion that the application of huge amounts of energy to human existence can explain much of what has gone wrong both in our human relationships and in our relationship to the natural world. In place of the settled communities of earlier centuries, the internal combustion engine has created cities characterized by restless streams of people moving constantly from neighborhood to neighborhood, from the country to the city, and from city to city. No wonder older people everywhere complain of the loss of a sense of community. Today conditions have reached a point where, in a typical North American city such as Naperville, Illinois, the average house changes hands every three years. 10 Nicholas Lemann, after studying this phenomenon, wondered whether Americans any longer have the social cohesion needed for a major national effort. As Peter Calthorpe writes,

Mobility and privacy have increasingly displaced the traditional commons...our shared public space has been given over to the car and its accommodation, while our private world has become isolated...the automobile destroys the urban street, the shopping center destroys the neighborhood store, and the depersonalization grows with the scale of government. 11

Although all this is particularly true of the United States and Canada, the trend has set in for Europe too. Thus, in Britain, during the doubling of car ownership over the last twenty years, the number of owner-managed village shops shrank from 40,000 to 8,000 simply because those with cars preferred to drive to larger centres to spend their money in supermarkets. 12

Children whose internal family bonding is weak and are not allowed to settle long enough in one place to develop solid relationships with streets and friends can be expected to succumb to those neuroses which the investigators of the National Institutes of Mental Health found so troubling. Nor can such children hope to develop a secure bonding with the natural world beyond city limits. This is particularly true, of course, for those living in large cities. Their experience of non-human life is apt to be conditioned by the sight of geometric, machine-clipped lawns and flowers dragooned into serried ranks, in other words of a Nature having no particular significance and wholly subject to the whims of humans. In the biologically sterile megacities the absence of more than the occasional tree can develop not indifference to Nature but actual hatred. Currently touring the United States is an exhibition of contemporary Japanese art from Tokyo and Osaka. Its curators have given it the title, "Against Nature." One of its participating artists is quoted as saying he has a feeling of loathing for everything to do with Nature and the soil. And this from a culture whose works of art up to the early years of this century revealed in their decoration a profound sense of oneness with Nature and a loving delight in living creatures of every kind.

There is evidence that the emotions which prompt such art from the concrete canyons of megacities may in fact arise from the unconscious suppression of their creators' basic inner needs. Kevin Lynd of the Massachusetts Institute of Technology has completed for UNESCO a study of the needs of urban children. The results, published in his book *Growing Up In Cities*,<sup>13</sup> have far-reaching implications. In his interviews with children in countries as widely dispersed as Argentina, Australia, Mexico, and Poland he found that, "no matter where they came from — it might be an inner city neighborhood, a provincial capital, or a rural village — the hunger for trees is outspoken and seemingly universal." Other studies, such as those from the Children's Environments Research Group at the Graduate Center of the City University of New York and The Town And Country Planning Association of London stress the urban child's need for vital personal experiences like silence, solitude, and the sensation of utter darkness — experiences which, needless to say, are almost impossible to come by in large cities.

There are distinctly bright sides, then, to a low-energy future in which small cities predominate. Once again, as in the past, children would grow up in settled communities close to the surrounding natural world, communities in which the cost of transportation would inhibit the restless moving of households from neighborhood to neighborhood and from town to town. It would be a world in which the macho entrepreneur would lack the energy resources in which to destroy forests, bulldoze wildernesses, or build world-girdling multinationals. As the greenhouse warming came on, and provided that it came on gently enough to allow a non-catastrophic transition to a steady-state world, a paradigm change of outlook would be inevitable in which the male planet-plundering view of the last hundred years would have to give place to a culture more evenly balanced between the values of the masculine and the feminine and more aware that hu-

man survival mandates a nurturing rather than an exploitive attitude toward the Earth.

Conversely, placing in human hands a limitless energy source such as working cold fusion could well signal the onset of another of those mass extinctions which have from time to time marked the course of planetary history over the last five hundred million years. In this event it would take a gambler of only minimal shrewdness to see the best bet was to place money on the survival of arthropods rather than on *Homo sapiens* .

## Notes

1. State Of The World, 1986 p. 92. Worldwatch Institute, Washington, D.C. See also the annual surveys of the British Petroleum Co.
  2. The Economist Apr' 22-27, 1990, p. 6.
  3. For reasons why nuclear power cannot be even a medium-term energy solution see the Worldwatch Institute's State Of The World, 1990 , pp. 23-24.
  4. Green Cities , ed. David Gordon, Black Rose Books, Montreal-New York, 1990.
  5. New York Review Of Books , April 12, 1990.
  6. Human Scale , Kirkpatrick Sale, G. Putnam's Sons, New York, 1980.
  7. Ibid., p. 201.
  8. Victoria Times-Colonist , May 19, 1987, excerpted from the Los Angeles Times .
  9. The New Elite , David Lebedoff, pp. 3 and 65. Franklin Watts, 1981.
  10. Nicholas Lemann, "Stressed Out in Suburbia", The Atlantic Magazine , Nov. 1989, pp. 47-48.
  11. Peter Calthorpe, "New Strategies For Suburban Growth", The New Pacific Magazine , Fall, 1988, p. 52.
  12. The Economist , Feb. 24, 1990 & Mar. 3, 1990.
  13. Quoted by Tony Hiss in "Reflections: Encountering The Countryside II," The New Yorker , Aug. 28, 1989.
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**Citation Format**

Graham, Colin (1990) *ENERGY, COMMUNITY, AND THE NATURAL WORLD*  
*Trumpeter*: 7, 3. <http://www.icaap.org/iuicode?6.7.3.9>

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