

Aspects Of The Post-Oil Community

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One thing that will hit Americans rather hard in the future is the problem of “individualism” vs. “collectivism.” Americans are loners. If you put a group of Asians on a desert island, they will get together and build a boat. If you put a group of Americans on a desert island, they will start arguing about property rights. The weakness of individualism could be seen during the Great Depression of the 1930s: in those days, the average person was isolated, lost, and afraid. It was a “shame” to be poor, so one could not even discuss the problem with one’s neighbors. The news media and the government largely denied that the Depression existed, so there was little help from them.

Closely related to the problem of individualism is that of the lack of ideological unity. The basic premises of any major discussion seem to be absent. In a typical crowd of Americans, half will deny that any of the dozen aspects of systemic collapse even exist, and most of the other half will say, “Well, I believe . . .” and proceed to spout whatever Pollyanna nonsense their illiterate brains have been filled with. Of course, if politicians never say a word about overpopulation, resource consumption, or any other real issue, then how can the average American be blamed for mental laziness? Well, perhaps there’s something to be said for intellectual responsibility. Certainly no one can say that informative books aren’t available — a good collection can be put together, at a dollar apiece, by roaming the second-hand stores, since nobody seems interested in reading books these days.

The individualist mentality has always been typical of Americans. There is a sort of frontier mentality that still pervades much of American life. In certain ways, this has been beneficial: freedom from the obligations of the “old country” have provided much of the motivation for those who came to what was called the “New World.” The beneficial side of individualism is self-sufficiency, which made it possible for pioneers to survive in the isolation of the wilderness. But individualism will not be as useful a response in the future as it was in the days of the pioneers. In fact individualism might just be more beneficial in good times than in bad, in times of prosperity rather than in times of hardship. The most obvious negative effect of individualism can be seen in today’s false democracy: political leaders can tell the most remarkable lies, and the response is silent obedience. It’s hard to understand such a thing happening in “the land of the brave,” until we realize that most Americans have little means of behaving otherwise. They are probably somewhat lacking in family or friends with whom they can share information or compare ideas, and they are therefore entirely dependent on the news media for their comprehension of human society. A solitary evening in front of a television set is not likely to promote healthy social relationships.

So how will people form viable groups in the future? To answer that question properly, we must first realize that the ideal political system is not a “political” matter at all, but a psychological one. I mean, it is not a conscious, cerebral decision; it is a matter of the hard-wiring of our nervous system. And I say that as one who does not believe in evolutionary psychology or sociobiology, or any other of those ant-like portrayals of human mentality. Humans and their ancestors spent over a million years living in small groups, hunting and gathering. To judge from primitive societies that still exist, those groups had neither perfect dictatorship nor pure democracy, but something in the middle, a sort of semi-anarchic but functional process of majority rule. Chiefs who didn’t perform well got the cold shoulder. The group was small enough so that each person knew every other person, and that rather clumsy democracy could work because both the “voters” and the “politicians” were visible. It has only been in a tiny fraction of the lifespan of humanity — the period called “civilization” — that political units have been created that are far too large for people

to know one another except as abstractions. Small groups have their problems, but in terms of providing happiness for the average person, the band or village has always been more efficient than the empire.

The maximum practical size for human association may be Robin Dunbar's number of 150, but we might need to be rather flexible about that — perhaps somewhere between about 20 and 200. Roman soldiers, for example, were organized into “centuries,” and modern Hutterite communities have between 60 and 160 members. In “A History of the Ancient World,” Chester G. Starr tells us that “whereas Paleolithic packs numbered perhaps 20 or 30, Neolithic farmers either lived in family homesteads, in villages of 150 persons (as at Jarmo), or in even larger towns (as at Jericho).” I once started to collect examples of present and past communities in which those numbers appeared, but I had to give up because of the immensity of the data. But a close look at a half a dozen types of human groups is all that is necessary to get a good intuitive grasp of the sorts of numbers that are workable. I like the word “tribe” for the principal group because for myself it is a useful catch-all word, even if it gets a scowl from an expert in social anthropology. But in any case, I am not thinking of any particular group, I am simply referring to the basic unit of social organization that is found in any of the older of cultures.

Groups larger than that of the band, the small tribe, or the village simply don't do as well in providing for the happiness of their individual members. A social group of a million or a billion may have military advantages but is more likely to operate as a tyranny than as a democracy — China is the obvious case. Larger groups are not necessarily unworkable, but they involve a greater risk of the loss of social cohesion.

One cannot throw a “tribe” together simply by sitting down and having a community chat in the course of one afternoon in a suburban living room. (The fact that we don't instantly recognize something so obvious is in itself proof of our inability to form a “tribe.”) Primitive cultures may be organized into any of a number of social groupings, and those groupings in turn are often parts of a larger group — there is a pyramidal structure, so to speak. But there are two characteristics that are found in these primitive cultures. In the first place, the “tribe” is always quite ancient; any group of that sort has been forming and reforming for generations, and one might say that the group is as old as humanity. Secondly, any genuine “tribe” (or whatever you want to call it) consists of members who are all tied by the bonds of either blood or marriage. Everybody is everybody else's cousin, so to speak. We may laugh at rural communities for what we regard as their “incestuous” behavior, but sometimes having close ties is precisely what keeps people alive. The “tribe,” then, is characterized both by its antiquity and by its kinship patterns. Such patterns would certainly not be characteristic of a group of suburbanite refugees lost in the wilderness and suffering from shock and fatigue. It would be an understatement to say that such an ad hoc clustering of humans would face psychological challenges unlike those of people who had been living deep in the jungle since time immemorial.

These new tribalists will also be living on a planet that has lost its familiar borders. Long before the twenty-first century reaches its end, what we now think of as the geopolitical face of the world will have been considerably transformed. The “booming economies,” relatively speaking, will be those with an adequate ratio of population to arable land — in Canada, in parts of Africa, in parts of Latin America, and in a somewhat amorphous area that stretches from the Baltic across to what is now the Mongolian People's Republic (not Chinese Mongolia). The tables will often be turned in the social and political strife that now affects much of the world, so that both the land and the government will be returned to the peasants. The great irony, in other words, is that many countries that have suffered politically and economically have ended up with good population-to-arable ratios, and these ratios will be a great blessing in the agriculture-oriented future.

Of course, there won't be as many people anyway. The world's overall population density right now

is about 33 people per hectare of arable land surface — far too many people. Even if we were all largely vegetarian, and if land were distributed fairly, we could not keep everyone alive in the post-oil world if the population were so large. The number is now 8 times greater than the absolute maximum that is possible without fossil fuels. In a hunting-and-gathering society, each family might need at least 25 square kilometers of land — and if that sounds like too much, just ask serious deer-hunters how much land they cover merely to get one animal per year. In a society of subsistence agriculture, the numbers are greater, but they still come nowhere near that of the world's present population.

The African countries with good population-to-arable ratios are not restricted to a particular part of the continent. To put it mildly, however, these African ratios cannot be regarded at the moment as indicators of well-being. The low density can partly be explained by saying that the countries have always been largely “pre-industrial.” But war, disease, famine, misuse of land, misuse of money, misuse of human resources, and lack of infrastructure have all had their effects.

There are 4 Latin-American countries — Argentina, Paraguay, Uruguay, and Guyana — that combine low population density with good soil and good climate. A great deal of the land, however, has been bought up by large international companies that practice monoculture and have no interest in gearing agriculture to the needs of the inhabitants. The implementation of land-reform policies will do wonders for the general population of those countries.

The countries with the worst proportions of population to arable land are mainly those of eastern Asia and western Europe. In Europe the exclusion can be better described in terms of too many people rather than too little farmland. The worst crowding of all can be seen in eastern Asia and the Arabian Peninsula.

One delusion that should be discarded is that of the “tropical island paradise.” Nearly all of the small Pacific islands are very densely populated, or are lacking in arable land. At the moment, they also have strict immigration policies. Coral islands — most of Micronesia, for example — lack both arable land and fresh water.

I have sometimes seen what might be called a “sour grapes” theory of the population-to-arable ratio: one could argue that countries that now have better ratios are merely indicating poor conditions of some other sort. To some extent this is true, but there are many important exceptions. The UK and the Republic of Ireland, for example, are very similar in almost all geographic respects, but the UK has 3 times the population-to-arable ratio; from the standpoint of subsistence farming, Ireland would be a far better place to live.

Food will become quite an obsession. If we look at “peak oil” in terms of its daily effect on the average person, we get a simple equation: “peak oil” equals “peak food.” Oil made it possible for us to keep 7 billion people alive — well, only barely alive, of course, since half of them don't get a very good diet. When the oil is gone, most of that population will also have to go. But when I say they will “have to go,” I don't mean that they will float up into the sky. And I don't mean that we will invent spaceships to take them to Mars. To put it rather bluntly, there will be some truly astonishing famines in the next few decades. The decline in oil production will be swift and ruthless, because without all the fertilizer and tractors and trucks, there will not be enough food for more than a small number of people. If we look at the oil-to-population ratios of previous years and project those same ratios onto the right-hand side of that bell curve, it's fairly easy to see that about 50 million people will be starving to death every year as a result of global oil depletion. One way or another, the population will have to return to about 1 billion rather than 7.

Even that 1 billion is rather optimistic, because by then there will have been so many side-effects from the entire spectrum of systemic collapse — ranging from resource depletion to governmental collapse — that it is unlikely that the planet will be able to keep as many as a billion people alive.

I've gone through the calculations a hundred times, adding in all the factors of war, epidemics, and so on, and my best guess is that the world's population will eventually drop to about 1 percent of its present level. To look at the future, then, we must start by looking at a world in which the human population has been dramatically reduced. The most basic principle is that each person will have to start thinking in terms of a smaller radius of activity. The globalized economy will have to be replaced by the localized economy.

Most food will have to be produced at a local level, and probably each family will have to produce its own food. The catch to growing food, however, is that most of the world's surface is unsuitable for growing food, no matter what techniques of farming are employed. This is not the fault of mankind, it is merely a consequence of the nature of the planet. On many parts of the globe, the climate is too hot, too cold, too wet, or too dry. In other cases, the land is too barren to support anything but a sparse growth of wild plants, which in any case are simply growing and then dying and replacing their own material

A small human population could nevertheless survive on agriculture, at least if it learned how to revert to some ancient methods, particularly as described by F.H. King in "Farmers of Forty Centuries." One technique of some Asian cultures was to bring grass or other wild plant material from the mountains, for example, and turn it into compost, thereby making use of the nitrogen, phosphorus, potassium, etc. of the wilderness, as well as the basic humus (carbonaceous plant material). Many other cultures used wood ashes. What it amounts to is that a large area of wild land was scoured to provide growth materials for the cultivated vegetable. The nutrient "source" of the wilderness, in other words, fed the nutrient "sink" of the farmland. This process of taking from the "source" and giving to the "sink" is one of the basic principles behind all "organic gardening," although few practitioners would admit it or even know it. The process also raises some enormous doubts about our concepts of "sustainability," but I'll sidestep that issue.

A second technique used by Asian cultures was to recycle all sorts of materials, and to do so as intensively as possible. Among the most important materials were human and animal feces. (Let us conveniently ignore the backbreaking labor that went into all this.) Of course, the process of recycling could never be stretched to eternity. One cannot create a perpetual-motion machine: every time those materials are recycled, a certain amount of N-P-K is lost to leaching and evaporation.

A third agricultural technique, found in Asia as well as in other parts of the world, was to grow legumes or other plants that absorb nitrogen from the air. Unfortunately there are no similar tricks for phosphorus or potassium; plants with very deep roots can draw some of these elements from far underground, but not enough to turn barren land into farmland.

If we go further back in time, or further down the ladder of cultural evolution, we find an even simpler method of maintaining a sort of temporary sustainability — if such a term is not a self-contradiction. All over the world, many primitive cultures simply grew crops in one area for a few years and then abandoned that plot, cut and burned another patch of forest or jungle, and started a new garden. Such a practice is hard on the environment, but for a sparsely inhabited region the technique is feasible. In any case, sheer necessity will make this a common practice in future ages.

David Pimentel, in his excellent analyses of food and energy resources, points out that if one is living mainly on cultivated plants, at least a quarter of a hectare per person would be needed, in the absence of synthetic fertilizers or mechanized irrigation. For example, one could live — barely — on about 400 kilograms of dried non-sweet corn (maize) per year. The yield per hectare of corn, however, is not likely to be over 1,500 kilograms.

It might be worthwhile to take a closer look at the overused and misused word "organic." "Organic fertilizers" can certainly do the trick, but in a post-petroleum world where are these going to come from, and how are they going to be transported? Powered dolomite, for example, will supply

calcium and magnesium, but that's very heavy stuff. If farmers are living in an environment where the soil is naturally barren, and if they have no access to petroleum-based manufacturing and delivery, then that dolomite might as well be sitting on the moon.

I had a 1-acre vegetable garden in central Ontario for 7 years. The soil was quite barren. The native vegetation was fragile and sparse. Without a motorized vehicle, there would have been little access to anything that would promote the growth of vegetables. That part of Ontario simply had very little N, P, K, Ca, Mg etc. in the soil. Yes, I could pay somebody to send me some cow manure, or I could arduously create an acre's worth of humus using grasses or whatever, but humus per se is just dead plant matter with C, H, O, and often — for example, in my part of the world — not enough of the other 13 elements. Humus is useful, but by itself you can still end up with your vegetables turning purple from phosphorus starvation. I think many people fail to understand that any plant life on the planet Earth contains those 16 elements. They are not necessarily synthetic in nature. For that matter, our own bodies are made up of such elements.

“Organic gardening” should be treated as a scientific hypothesis — and, indeed, it is worthy of consideration. Instead it is treated as a cult. One either “believes” or does not “believe,” and any request for precise observation or measurement is treated with scorn. That attitude does no one any good. No genuine information is offered, only a quasi-religious trance and a simplistic dogma. I have often wondered what a Freudian would say about the bodily fixations of those who are mesmerized by what is ultimately just cow dung.

The most useful crops will be those that are high in carbohydrates and protein. Crops that are susceptible to diseases, pests, bad soil, or bad weather should be avoided. In most of North America, the most important crops will be corn and beans. Of course, those would have to be open-pollinated types, because hybrid varieties do not produce viable seeds — you have to buy the seeds every year from big companies that produce them, and those big companies will not be around in the future (which is perhaps a great blessing). In other parts of the world, other grains will be more suitable.

Good farmland will of course be scarce, but many people will become aware of one of the curious side-effects of the urbanization that has characterized so many countries since the Industrial Revolution: the abandonment of good land. Over the last few centuries, as people moved from the countryside to the city, the result for some of those rural areas was a considerable decline in population. The same process is still underway. Even in highly developed countries, although the cities may be crowded there are rural areas that are steadily losing population. Such depopulation will present opportunities for those with a pioneering spirit. Admittedly a lot of these abandoned lands are what the encyclopedias dismiss as “marginal uplands” — as opposed to the lands along the valley bottoms, where rivers and rains have carried the good soil — but the better farmers will know how to deal with these more-fragile environments.

It would be quite an understatement to say that, without gasoline and diesel fuel, transportation will be limited. Not only will the fuel be lacking, but even the roads to drive on will become less common. Anyone who has driven past a construction site should suspect that a modern road is not as durable as Roman aqueduct. Asphalt is made from oil. As oil becomes scarce, so will asphalt, and paved roads will therefore go unrepaired. As social chaos intensifies and municipal governments watch their budgets disappearing, the maintenance of paved roads will be further reduced. When those roads are not repaired, it will take little time for them to become cracked and unusable, and they will often be blocked by smashed and abandoned cars whose owners have lost the ability — or the sheer willpower — to keep them running. In any case, the main roads will generally be going in the wrong directions: from one city to another, exactly where most people will not want to go. Any clever human being would stay away from the cities, and instead go up into the hills, well away from populated areas, further on, to greener pastures.

There will be only 3 methods of travel: on foot, in a non-motorized boat, or on the back of a horse, a donkey, or some other animal. One's speed by any of these 3 methods will be about the same: 40 km per day, if one is in excellent shape. For short distances, one means of transport may be quicker than another, but the longer the distance we take into consideration, the less it seems that walking is to be despised. Certainly the history of bicycles is not likely to go on for much longer: even where paved roads are usable, bicycles will be hard to repair without the industrial infrastructure to provide the spare parts and the servicing.

It should be obvious that those who live in the country will be better prepared than those who live in the city. A city is a place that consumes a great deal and produces little, at least in terms of essentials. A city without incoming food or water collapses rapidly, whereas a small community closely tied to the natural environment can more easily adjust to technological and economic troubles. Even out in the country, however, the present housing patterns often resemble the gasoline-induced sprawl of the suburbs. Paradoxically, many "rural" areas have become "urbanized," in the sense that they are doing their best to imitate the worst aspects of large cities. More useful would be something resembling a traditional village, with the houses at the focus and the fields radiating from that point — we can read Thomas Hardy's novels to see how this used to be.

"Something resembling a traditional village" is, of course, different from the real thing. In a genuine "traditional village," people have known one another for generations, and a bunch of pale-skinned visitors is not likely to be received with open arms. If these urban refugees show up flashing their useless credit cards all over the place, and demanding assistance, but they have no practical skills and don't even have the muscles for basic manual labor, it is unlikely that they will be welcomed in any long-settled community. These refugees will have to develop their own communities, and they will have to overcome the problem of their inadequate social skills. But they will learn. In spite of themselves, they will learn.

I have great hopes for the future, when the hard times are over. By the end of the present century, the human population will be much smaller than it now is. The 200-odd nations of the present day will be only a dim memory, and the major languages will have broken up into local dialects, to such an extent that a linguistic outsider will be one who lives only over the next hill. Grass will be growing everywhere, and the long miles of cracked highways will be merely a curiosity. Yet those days will not be the Dark Ages: on the contrary, starlight will once again appear over the cities at night. Humans were not designed to live in groups of such immense size as we see today, nor were they given the physiological equipment to deal with the over-stimulation of crowded living-spaces. It is also true, for various reasons, that the sight of green trees is more pleasing than that of gray machines. It is not just a platitude to say that we are out of touch with Nature.

We can compare the coming age to a world of many centuries ago. In the year 731, the Venerable Bede wrote his "Ecclesiastical History," in which he describes the world of the Seven Kingdoms into which Britain was then divided. Bede begins his story by telling us how the Roman Empire was destroyed by the Goths in 410, as a result of which the Romans no longer ruled in Britain, and the people of that land had to develop a culture separate from that of the Romans. In Bede's time the empire was still in the process of turning to rubble and dust, but England's "Dark Ages" were filled with light, as the monks scratched away in their scriptoria. Bede himself almost single-handedly invented the writing of true history, that is to say, history based on a fixed and accurate dating scheme. Thirteen centuries after Bede, we might be proud to accomplish as much

I think even in our dreams we imagine a less crowded planet, a less noisy one, a less busy one. Such dreams tell us the obvious truth that daily life should not be a fast-paced interminable struggle of each person against every other. Surely we imagine standing in a doorway and watching golden fields of grain rippling in the wind like the waves of the sea. Surely in our dreams we imagine the

song of the scythe, and the whir and thud of the loom. Who knows? One day anything might happen. Perhaps we could even have a world where people can live with nobility, dignity, and grace.

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