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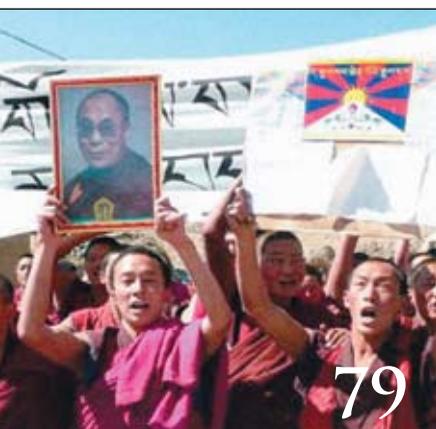
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The Return of Malthus

Scarcity and International Order

Jørgen Ørstrøm Møller

What a difference an assumption can make. Since the Industrial Revolution in the second half of the 18th century, a fortunate fraction of mankind has basked in a world of plenty. Living standards have risen exponentially as vast numbers of people escaped the dire poverty that had been the lot of their forebears for ages untold. The share of income spent on food in these revolutionized parts of the globe has fallen dramatically—in many industrialized countries to below 10 percent, and as low as 7.4 percent in the United States (as of 2006).

For most of the past two centuries, the denizens of plenty have assumed that the break with bleak pre-industrial poverty was a permanent one. They have often assumed, as well, that the ways of plenty would eventually spread to encompass the entire human family, and that when they did, most of the ancient misanthropies that have afflicted humankind would vanish from the face of the earth. The end of scarcity, it has been widely believed, would end the causes for greed and envy, avarice and war. War would no longer be “worth it”, a presumption, it is fair to say, that lies at the very plinth of the Whig interpretation of history.

This is by now an old idea, but it is a sturdy one that has been propelled forward by the end

of the Cold War and the cluster of phenomena known by the catchall phrase “globalization.” Indeed, new and improved versions of the Whig interpretation have gained much credence since Herbert Butterfield coined the term in 1931. Thanks to globalization and the parallel spread of the received macroeconomic gospel, many millions more have been raised from dire poverty in the past two decades—a feat no amount of foreign aid could ever have produced. This unarguable achievement, many have claimed, could portend the end of poverty in our times. Add the comforting lyrical harmonies of democratic peace theory to the benign chorus of globalization and one gets a world veritably transformed very much for the better—perhaps even “the end of tyranny”, as George W. Bush put it in his second Inaugural Address.

What if, however, the foundational assumption is wrong? What if the past two centuries, particularly the past two decades, have been not a reflection of the new rules of earthly progress, but exceptions to the old rules that once were and again shall be? In other words, what if Thomas Malthus turns out to have been right after all, and Adam Smith wrong?

For most of the past two centuries, few would have acknowledged even the possibility of such a thing coming to pass. Malthus was dubbed an intellectual fossil, a man who never understood how institutions and science could alter the terms of economic life. But alas, it doesn't take much to revive a wisp of doubt about the permanence of human material achievements. Food riots in more than two dozen countries stretching from Haiti to Egypt

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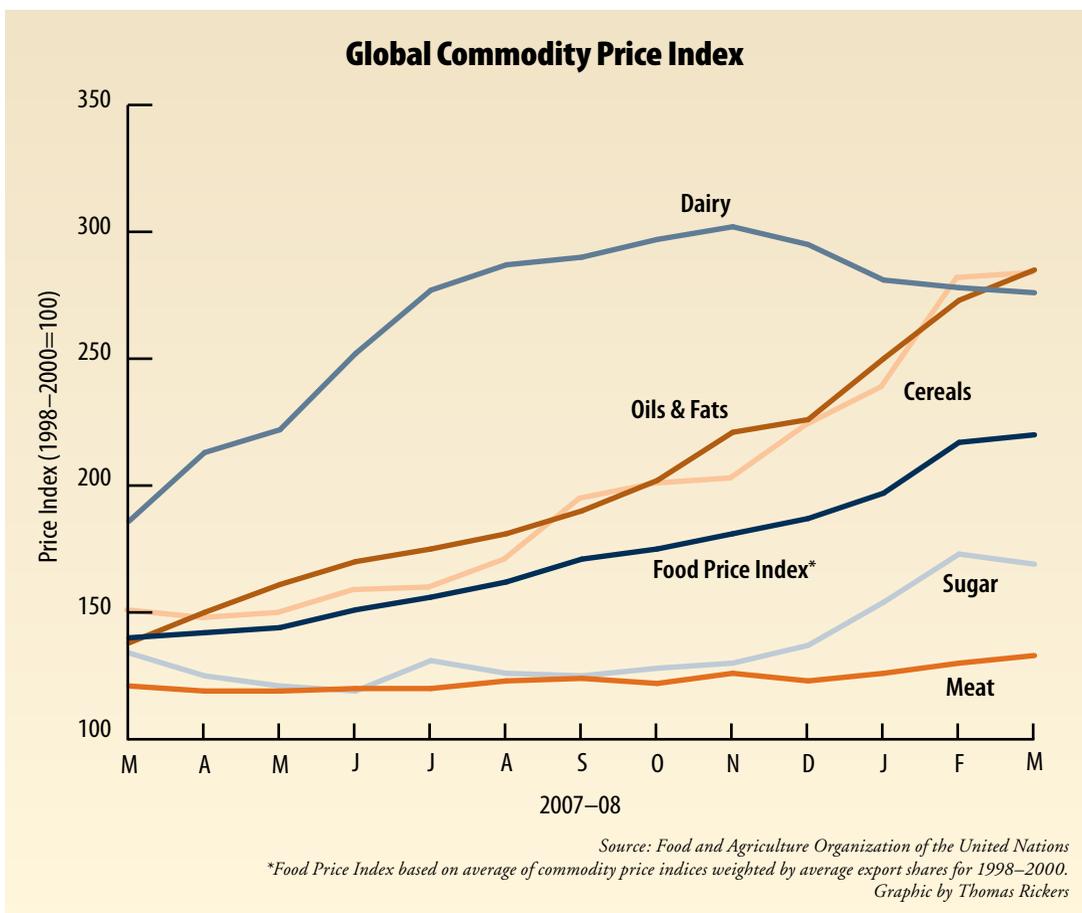
and a sharp increase in world food prices over the past three years are reviving Malthusian fears. Worrisome global financial instability, too, worsened in recent months by the subprime mortgage debacle in the United States, suggests serious structural flaws lurking in the international economic order. These developments have revived the question: Is the world really on a trajectory to escape poverty once and for all, or is it slipping back toward pre-Industrial Revolution conditions?

An Extended Debate

Is this a question we can answer in advance, before the verdict lands in our unsuspecting laps? The record suggests not. After all, pessimists and optimists have been going at one another for a very long time, and no one has yet won the debate. The modern version of it began with Malthus's 1798 *Essay on the Principles of Population*, in which he argued that "the power of population is so superior to the

power of the earth to produce subsistence for man, that premature death must in some shape or other visit the human race." The roughly co-terminous analysis of Adam Smith predicted a totally different future for mankind, however, and Smith won out in the hearts and minds of succeeding generations because history seemed to vindicate his view and condemn Malthus as a scientific failure.

Smith did not convince everyone, of course. There were and will always be doomsayers—it is part and parcel of human nature. For most of human history, doomsaying was an integral part of religion (hence the term "jeremiad"), but over the past century or so this tradition, like so many others, has been secularized and the analysis extended from Malthus's focus on food to the broader question of finite resources. Thus, the Club of Rome predicted in 1972 that limited availability of natural resources would stop economic growth. In a second report two years later, this unconditioned prediction was revised to say that some of the problems enumerated in the first report would be



manageable after all, but the gist of the Club's pessimism remained and carried over into the Carter Administration. *The Global 2000 Report to the President*, commissioned by President Jimmy Carter in 1977 and released in 1981, stated:

If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically, and more vulnerable to disruption than the world we live in now. Serious stresses involving population, resources, and environment are clearly visible ahead. Despite greater material output, the world's people will be poorer in many ways than they are today . . . unless the nations of the world act decisively to alter current trends.

Wrong. The nations of the world in no way acted decisively, but after the twenty years spanning 1979 and the year 2000 the world's people were nonetheless much better off "in many ways." In the meantime, we were witness to some amusing side bets, like the one in 1980 between the optimist Julian Simon and the pessimist Paul Erlich. (Simon won.) And CIA predictions made during the Carter Administration concerning the price of oil also turned out to be not just wrong, but ludicrously wrong.

If one looks at the key predictions of the Club of Rome, none of them has come true. To the contrary, the global economy has grown mightily over the past 35 years, and for most of that time the real price of oil and most other raw materials has stayed constant or has fallen. This has led a host of critics to charge that the essential view of the Club of Rome and its post-Earth Day supporters amounted to a late 20th-century manifestation of pantheism, an old romantic elitist ideal that is increasingly out of step with our dynamic world.

A Debate Extended

Despite the poor—embarrassing, really—showing of latter-day doomsaying, the idea that the past two centuries are the exception rather than the rule of economic reality never seems to go completely out of style. And well it

shouldn't: Despite the record, attempts to revive Malthus may not have been mistaken, merely premature. So many times have little boys cried wolf that many are now persuaded there is no wolf. That could be a mistake, and it is certainly a possibility worth serious consideration.

All efforts to date to vindicate Malthus have proven wrong for four reasons. First, new territories have opened up to change the equation between the supply and demand for resources. Second, new technologies have arisen to make vastly better use of the resources we have. Third, the introduction and spread of the market economy has significantly improved the efficiency with which resources are used. Fourth, the modern state has been able to devise administrative machinery to help form, protect and regulate the market, and within this machinery there has arisen a transnational revolution in logistics that has enabled mankind to shift resources to alleviate imbalances and minimize scarcities on a global scale.

New Territories: Many textbooks in Europe present new territories opened up in Eurasia after 1800 as being most important economically, but four others have been even more so: North America, South America, Australia and New Zealand. These new territories in "New Worlds" delivered agricultural land to feed growing populations with lower food prices, while emigration to them reduced population pressures in the Old World. Real wages thus went up in newly industrializing countries, making a fool out of another celebrity doom-sayer, Karl Marx.

Technology: The end of the age of sail brought about by the advent of steamships and the railroad made these new territories accessible. Otherwise, food grown there could not have made it to the metropolises, and little emigration would have flowed from Great Britain in the 18th and 19th centuries; catastrophes like the Irish famine of the 1840s–50s would have continued periodically, rather than being the last the West would see. Subsequent technological waves have enabled still higher productivity. After the advent of steam power came electricity, then the science of the green revolution, and then the information and communication revolution. And we are now witnessing a new wave with astonishing breakthroughs in bio- and

nanotechnology. These inventions have progressively liberated us from the straitjacket of having to rely mainly on human and animal calories as sources of mechanical energy.

Markets: With Adam Smith and David Ricardo, the young Industrial Revolution found its high priests. Over the past two centuries, Smith's invisible hand and Ricardo's comparative advantage have constituted the foundations for economic growth around the world. This has been so because Smith, Ricardo and others not only described and explained how markets worked, but also showed individuals and governments alike how to keep them working.

Whether Smith and Ricardo discovered an objective reality or helped to create a social one is still open to debate. Either way, economic incentives and balanced contractual relationships replaced prohibitions and commands from on high. To the surprise of nearly everyone, nearly everyone benefited, and, more important, a shift of basic assumptions about social life took place as a result, leading the way from the advent of individual agency in the market to the idea of individual agency in politics.

The State: The emergence of the modern state in the latter part of the 18th century marked the transformation of small political units, which had characterized Europe for centuries, into larger and more viable economic entities. Had the petty princes and bishops of early modern Europe been able to constrain markets within political borders, the potential embedded in the new technologies of the Industrial Revolution would have come to little.

At a later stage, the modern European state itself became too small for its own economic britches, leading some elites to react by trying to expand trade, others to experiment with mercantilism and imperialism (best defined as deliberately imbalanced trade, armed). The need to enlarge the market to fit economic reality now leads states either to support free trade or to voluntarily construct even larger political-administrative units, the European Union being the most obvious example. The logistics revolution, meanwhile, has enabled some states to help others deal with scarcities, whether through food and foreign aid or with humanitarian relief efforts. In all cases the basic

aim is the same: to enable, protect and guide the benign functioning of markets both within and among states.

Was it just a stroke of good luck that these four seminal shifts interacted and shaped a world so dynamic and so different from what had come before? Or is there something about human nature that can reassure us that this wasn't luck, but rather a sign of the human capacity for genuine achievement that can be replicated in the future? We are going to find out because, most likely, the world has now used up the breathing room that these four factors have provided, leaving us today in roughly similar circumstances to those of 200 years ago. Two questions thus come to the fore. Can we devise another set of escape hatches to ward off a Malthusian fate; and what might global politics look like if we can, or if we cannot?

The Wolf This Time?

The clouds of a Malthusian storm seem to be gathering. The world faces looming shortages of food, energy, raw materials, water and habitable environment. These shortages are not confined to the "known world", as was the case two centuries ago, but encompass the whole globe. To hold off the return of Malthus, we need some equivalent of new territories, new technologies, the further expansion and refinement of market efficiencies and, especially, new forms of political organization to enable markets to create the best balance of incentives for sustainable economic development on a global scale.

To match the aforementioned prospective shortages against the four categories of anti-Malthusian remedy is a project for a book, not an essay. A few selective and suggestive examples will therefore have to suffice as preliminary illustration.

For reasons both remote and proximate, food prices have been rising worldwide for some years, particularly so in the past three years. One reason is population pressure in general: There are more people, more mouths to feed. But this factor is, perhaps counterintuitively, the least significant of all in explaining the price rises of recent years. More important is the fact that people in many parts of



Food protests in Mogadishu, Somalia, May 1, 2008

the developing world are leaving rural areas for towns and cities, and rising wealth is enabling more people to want—and to afford—to eat higher on the food chain. It takes a far larger input of resources to produce the equivalent amount of meat calories than vegetable protein calories. More capital-intensive methods of growing food, which in some cases is responsible for helping to depopulate countrysides, require petrochemical fertilizers and fossil fuels. When the prices of those inputs go up, so do the prices of the outputs. The fact that much of the world market for food is denominated in U.S. dollars has also had an impact on prices; if the dollar weakens, by definition, it can buy less food per unit. If this were not enough, the use of foodstuffs to make biofuels has reduced the amount of food available, though experts argue over how much. If supply goes down as demand goes up, the inevitable result is higher prices.

Obviously, some of these factors are more amenable to intervention than others. Governments could, if they were ever to come to their senses, stop the foolishness of current biofuel programs, which are not cost-effective ways of meeting energy demand and which accentuate the basic unfairness of trading food in the mouths of the poor for fuel to run SUVs in the American suburbs. The dollar may not remain weak. The other factors, alas, are harder

to change, but it is still worth examining what interventions in the form of new territories, new technology, market mechanisms and adaptive political organization we can expect to offset the factors pushing up the price of food.

There are vast swaths of the world that could be farmed but are not. Some areas used to be farmed but are farmed no longer, and new regions that have never been farmed might be if market incentives were right and state policies were enabling. In the former category are parts of Russia and most of Ukraine. In the latter category are parts of Africa. If global warming proceeds as most scientists predict, not all the effects will be bad—unpopular as it may be in some places to say this. Large sections of northern Russia and Canada that are now too cold to farm economically (or at all) might become richly arable in a matter of mere decades.

New technologies can also contribute to crop viability in colder climates, while other biotech innovations may increase productivity in lands already farmed. Of course, topsoil is in limited supply, no matter how efficiently technology improves and markets are able to function. Even the most optimistic find it difficult to support predictions of strong upward trends for agricultural production—a second Green Revolution on the scale of the first. The likeliest prospect is not famine but higher food prices that will exacerbate social inequalities

both among and within countries across the globe.

What about energy? Analysts agree that demand for energy is rising sharply worldwide, led by growth in China, India and other large developing countries. Prices will rise as demand outstrips the supply of “easy” oil, whose production has peaked. But the overall picture is not a simple one. As countries develop, energy efficiencies are bound to improve thanks to technological innovation, market efficiencies and deft political regulation. As was the case in the United States in the late 1970s, 1980s and 1990s, the global economy is now doing a much better job of squeezing units of gross domestic product out of one barrel of oil, and that trend is likely to continue. So prices will rise, but not in lock step with economic productivity. Economies can sustain higher energy prices and still grow.

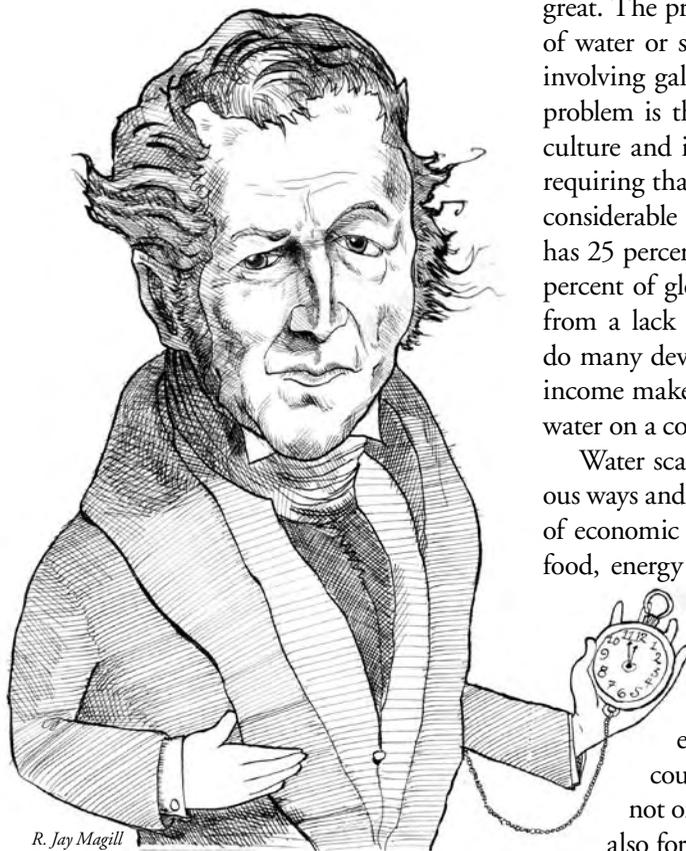
In the slightly longer run, the issue will not be so much the price of oil but the overall composition of energy sources. Substitution from oil and gas into other energy sources will occur, but more likely than a major shift to renewable sources such as wind energy or

solar energy will be a switch to coal and perhaps nuclear power. If coal plays the major role, the global economy’s dependence on fossil fuels will be basically unchanged. Here, too, prices for energy will rise because of the need for large investments in infrastructure. The same can be said for other raw materials, despite some remarkable technical advances in materials science.

Shortages of these three elements—agriculture, energy and raw materials—will prove manageable. The global economy will not literally exhaust supplies, and price increases will not derail the global economy. Global growth under these circumstances will still be possible, though not at the levels we have seen in the past two decades. Political challenges may arise, however, from the fact that both resources and growth will be distributed in ways different from those to which we have grown accustomed.

The picture is less sanguine when it comes to water and environments clean enough to be habitable. The world has limited renewable supplies of fresh water, but the amount is great. The problem is not the absolute amount of water or some theoretical division problem involving gallons per capita per year. The real problem is that water is often scarce for agriculture and industry where it is most needed, requiring that it be transported and purified at considerable cost. China, for example, which has 25 percent of global population but only 7 percent of global fresh water resources, suffers from a lack of hydrological infrastructure, as do many developing countries. Low per-capita income makes it basically impossible to supply water on a commercial basis.

Water scarcity affects food scarcity in obvious ways and negatively influences other sectors of economic life as well, not least health. Like food, energy and other natural resources, water is a tradable commodity. To date, international trade in water is limited, but it is a safe bet that fresh water commerce will expand. After all, many industrial countries charge considerable sums not only for industrial uses of water, but also for household use in order to encourage conservation and to finance investment



Thomas Malthus

in infrastructure. It stands to reason that trading will become a growing aspect of the basic international economy of water. The problem is that water is very heavy and costly to move, so market mechanisms enabled by intergovernmental arrangements can only work once the replacement cost for water rises to a sufficiently high level. But some countries experiencing water stress will be too poor to pay such prices or to afford energy-intensive desalination alternatives.

Here again problems of equity, distribution and social stability broadly construed come into play. The difference with water is that the elasticity of demand is zero. People can do without meat, air-conditioning and copper pipes. They cannot live without water. This is why food shortages may cause riots, but water shortages may cause either wars or revolutionary efforts at cooperation to avoid them. Water is high-stakes stuff.

Having a clean, habitable environment falls into a category of its own. Food, energy, raw materials and even water are concrete, physical things. They can be seen, counted, measured and marketed in standard units. Inequities can be assuaged by arranging to literally move any of them from one place to another within rules established by political systems and calibrated by markets. Not so with environments. One cannot move, chop up or sell habitable environments in any practical way. And yet pollution and climate change can be generated by some countries to the detriment of others, with large overall economic implications. Environmental issues present a challenge to the global commons that neither new territories, technology nor the function of markets alone can solve. The only way to manage the threat of environmental degradation heralding the return of Malthus is to devise new forms of international governance.

So far, world leaders have not done a good job of this. The Montreal Protocol on ozone-depleting gasses is a notable exception to the general rule of failure. The Kyoto Protocol, on the other hand, illustrates the rule. Those

who devised this Protocol made fatal political errors of judgment that have resulted in major parties being either left out (China and India, for example) or politically forced out (the United States) of participation. Just as bad, its key mechanism—cap and trade—does not address the real problem, which is the need to reduce global production of greenhouse gases. Kyoto's mechanism cannot ever hope to achieve the numerical aims of the agreement except by natural population decline in places like Russia and the European Union, for emissions track uncannily with demography once societies reach a certain level of development.

Everyone understands the basic problem here: State sovereignty protects polluters of all kinds from being called to task for the effects of their pollution on others. Sometimes these

The only way to manage the threat of environmental degradation is to devise new forms of international governance.

effects can be downright existential, as with the possibility that rising sea levels caused by global warming can drown whole island nations. In some cases, too, the effects can be deliberate—states can now wage environmental aggression on each other, and in the future this may become a more common form of aggression than traditional territorial grabs.

Nearly all the schemes propounded thus far to deal with this problem, however, are doomed to fail because they try to fix responsibility—and exact remuneration—on the sources of pollution. Some favor emission quotas and some favor tradable quotas, but this will only cause market distortions and recession. Others want obligatory environmental standards written into all trade deals, even if enforcing them is impossible and the cost of goods would be highly inflated as a result. Still others advocate placing heavy taxes on multinational corporations that are polluters, but companies can move or disaggregate to avoid taxation. And others want to tax international transport, since emissions from ships and airplanes are considerable. But that will also further distort markets and raise prices, thus stifling growth.

The only sensible way to conceptualize the problem is to stop thinking about producers and start thinking about consumers. The ultimate cause of pollutant emissions is not the producer but the consumer. Demand is trump, not supply. A fiscal mechanism that shifts the burden to the consumer—some sort of Polluter Pays Principle (PPP) on the global level—seems therefore to be the least unfair, and the least bad, available solution. The basic idea is an old and proven one: Whatever you subsidize you get more of and whatever you tax you get less of. If you tax the consumption of products whose manufacture causes pollution, you'll get less pollution. If you subsidize the consumption of products that are carbon-footprint friendly compared to those they replace, you'll get more of them.

A PPP approach would not interfere with established comparative competitive advantages, and since it would be assessed against consumers, not producers, it will not affect geographical production patterns. If properly designed, a PPP system may even work as a strong incentive to reduce emissions if it rewards countries and/or companies that introduce new technology with a lower emission level per unit of fuel. As long as emission levels do not go up, the levy paid will be unchanged even if production does go up. One could even use revenues from PPP taxes to directly stimulate research and development of new environmentally friendly technology.

To get at the problem of environmental pollution with any hope of success, significant political accommodation—political engineering, so to speak—will be necessary on a global scale. The international order will have to change to keep Malthus at arm's length. Only an understanding that includes the major countries, beginning with the United States and including the European Union, China, Japan, Russia, India, Brazil and the oil-producing states, has a chance to succeed. And even then, implementation will be difficult, expensive, and take a long time to put into place. Who today would bet that this will happen? In short, if Malthus does return, he may do so not for wholly natural reasons concerning any inherent limits to growth, but because human societies prove unable to reorganize themselves to allow new frontiers, new technologies and new market designs to keep him at bay.

Winners, Losers and Big Losers

What might the world look like if we do not adjust, and Malthus does return? We cannot know for certain, but one way to think about the question is to postulate a world in which countries fall into one of three basic groups.

In this thought experiment, the first tier of countries would consist of North America and

A study published by the Central Intelligence Agency in 1977 concluded that, “By 1985 . . . demand for OPEC oil will reach 47 to 51 million barrels per day (MBD). . . . Even if all other OPEC states produce at capacity, Saudi Arabia will be required to produce 19–23 MBD if (world) demand is to be met. Prices will rise sharply”

In a subsequent 1979 study, the CIA asserted that, “Supply disruptions caused by developments in Iran have advanced the timing of (the oil) price increases” already projected in the 1977 study. . . .

The CIA forecasts were rather typical of the hundreds published during the 1970s and early 1980s by oil experts in government, academia, private consulting firms, the World Bank and elsewhere. A 1981 study by the Congressional Budget Office forecast that prices would rise during the 1980s from \$30 to \$115 per barrel. . . .

On the basis of these forecasts President Carter projected that U.S. annual oil imports would reach an astronomical \$500 billion by 1985. In reality, they were \$52 billion in 1985, down from a peak of \$80 billion in 1981.

—**Eliyahu Kanovsky**, *OPEC Ascendant? Another Case of Crying Wolf*
(Washington Institute for Near East Policy, 1990)

Europe, perhaps joined by Japan, Australia, New Zealand, Israel and a few other advanced states. These countries, or conglomerations of countries, do not face acute water shortages (Israel does but it has advanced desalination capabilities), and the agricultural sectors of most of them can be turned into genuine export bonanzas, reaping foreign exchange and providing large numbers of jobs, if they are willing to reverse 200 years of migration from the countryside to the cities. They are short of some raw materials and energy—Europe far more than North America, and Japan and Israel far more than Europe—but the larger ones sit on ample supplies of coal and all are rich and technologically advanced enough to turn scarcities of energy and raw materials into manageable problems by throwing R&D money at them. Indeed, if North America and Europe could combine forces, economically if not also politically, they would be in a position to dominate a Malthusian world.

The second tier is made up of China and India, where high growth over recent decades will be threatened by shortages in almost all areas except coal. Compared to North America and Europe, they may be forced into political choices about which problems to solve, or at least solve first, because they lack the money and technology infrastructure to finance a way out of all of them at the same time. They will need to prioritize dealing with water and food shortages, followed by energy and raw materials deficits—not to speak of what to do about maintaining environments clean enough for human habitation. Even if they make good choices, their political stability may be endangered. Parts of both of these countries are richer in resources than others, so as challenges mount, the richer areas may balk at supporting the poorer ones. In the end, it will be a race in which high growth and good governance are pitted against challenges and deteriorating conditions. With luck, China and India may make it, but it will be a close-run thing. If they do not, they may collapse into chaos. The stakes will be high. Whether the political leaders of the 2.3 billion people living there get it right will determine the future global system.

The poorer countries constitute the third

tier, which unfortunately will not only remain poor but become even poorer. Some of them may escape the Malthusian trap if they possess energy or raw materials, but the large majority will tumble, fast or slow, into a Hobbesian abyss. Some countries in Latin America and many in Africa will fall into this category.

In a future Malthusian world it is clear that there will be a stark shift in relative prices in favor of energy, food and raw materials, and this will change global production and trade patterns. It will trigger new investment in infrastructure, logistics and transport facilities in the richer countries. Richer countries will be capable of delivering capital and resources to each other and to poorer countries, but poorer countries will not, and many poorer countries will not have the wealth or administrative coherence to receive and use what richer countries have on offer.

Clean environments aided by new technologies such as coal liquefaction and desalination will be enjoyed by the countries that can afford them; some poorer countries may have cleaner environments too, but mainly as a function of sharply reduced economic activity. In a Malthusian world, this would suit the interests of richer countries. It does pose what one might call a challenge of moral aesthetics, but the richer countries, if they really wanted to, could deliberately return to a time before CNN when the misfortunes of the poor were unknown to them. Whoever thinks this impossible suffers from a failure of imagination.

There is a good chance that the world can hold off Malthus, but in doing so it will come to be a different world politically from the one in which we live today. If that chance is lost, the world—or most of it—could come to resemble the dystopias of science fiction, or perhaps even a level of human degradation beyond novelists' imaginations. Even the "winners" in such a world would never be safe for long, for it is unlikely that the losers would leave off revolting against a world system that condemns them to seemingly eternal poverty and humiliation. When you think about it, Mr. Malthus is a man we should not want to meet in person. He is an unwanted guest, one well worth working to avoid. 🌐