

IS ANARCHY COMING? A RESPONSE TO THE OPTIMISTS

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What is the human prospect? Will our future be marked by rising prosperity, health and happiness for all? Or will population growth, environmental crisis and ethno-nationalism drive large parts of the world into violence and anarchy?

In a widely read article in February's *Atlantic Monthly*, Robert Kaplan argues that many countries are on the threshold of anarchy; some, he asserts, have already crossed it. Kaplan draws on his experience reporting from dozens of poor countries and on the findings of an international team of researchers I have led for the past three years. He paints an appalling picture of demographic and resource stresses eviscerating developing societies, tearing apart their social fabrics and institutions, and enfeebling their governments.

More recently, in the pages of the *Globe and Mail*, Marcus Gee has offered a detailed rebuttal. He takes Mr. Kaplan's article and my work as representative of the opinions of a broad group of people that he calls "doomsayers." In doing so, he implies that Mr. Kaplan and I hold opinions that we do not actually hold, especially on matters of international debt and trade, the likelihood of oil shortages, and the danger posed by current nuclear arsenals. Here I respond to Mr. Gee only on those matters where our opinions differ sharply.

Marcus Gee presents the optimists' case well. But his argument -- like many optimistic arguments about the human future -- is undermined by three common mistakes. The first is the use of over-aggregated data. When he discusses literacy, health, food production and fertility, Mr. Gee relies on data representing averages across many countries. This approach obscures worrisome trends in individual countries. For instance, while he is right to note that fertility rates have dropped astonishingly in the developing world taken as a whole, rates in many African and Middle Eastern countries remain stuck at 5 to 7 children per woman.

Moreover, Mr. Gee cites aggregate data selectively. He does not note, for example, that in developing countries during the 1980s, arable land per capita dropped by

almost 2 percent per year. Nor does he note that global fish harvests appear to have peaked at about 100 million tons annually.

The second mistake is the facile extrapolation of past trends into the future. Mr. Gee seems to think that past dramatic improvements in food production and fertility rates will continue. But the graphs he presents within his own article show that growth in agricultural yields has slowed since the mid-1980s. A recent report of the International Food Policy Research Institute notes that "rice yields increased rapidly during the 1960s and 1970s, but since then the annual rate of increase has slowed. It is returning close to the rate prevailing in the early 1960s, declining from 3 percent a year between the mid-1970s and early 1980s to less than 2 percent in the late 1980s." World grain production per capita has been flat since 1980.

Similarly, on fertility rates, Mr. Gee's own charts show that Indian and Chinese fertility rates have decreased little since the early 1980s, after falling sharply in the 1970s. It turns out that the decline in fertility often slows as families approach their replacement rate of two children. Family planners have found it much harder to convince parents to forgo their third and fourth children than their six and seventh. The result is that India and China are still growing by about 18 and 16 million people a year respectively.

The third mistake is to assume that as long as we have economic growth we do not have to worry about environmental and demographic problems. Certainly increased prosperity can help: as people become wealthier and better educated they have fewer children, and they stop some of their resource-damaging practices. But whether or not economic growth does help is determined by the kind of growth and by who benefits from it. Often, rapid economic growth only enriches powerful elites and cronies.

And in many poor countries, rapid growth is achieved by over-exploiting environmental resources like forests and soils. By converting their ecological wealth into current wealth, these countries often sacrifice future prosperity. In the case of Indonesia, for instance, the economist Robert Repetto shows that a full accounting of the costs of natural resource depletion cuts the country's economic growth rate from 7 percent per year to 3 percent.

Mr. Gee's argument represents one pole of a thoroughly sterile debate. On one side we have neo-Malthusians - often biologists or ecologists -- who claim that finite natural resources place strict limits on the growth of human population and consumption; if these limits are exceeded, poverty and social breakdown result. On the other side we have optimists like Mr. Gee who say that there need be few, if any, strict limits to population or consumption. Properly functioning economic institutions, especially markets, will provide incentives to encourage conservation, resource substitution, the development of new sources of scarce resources, and technological innovation.

Each of these perspectives grasps a portion of the truth, but neither tells the whole story. The optimists provide the key insight that we should focus on the supply of human ingenuity in response to increasing scarcity rather than on strict resource limits. But they make the mistake of assuming that an adequate supply of ingenuity is assured.

The resource problems of concern to poor countries now, and for the foreseeable future, are scarcities of renewables like cropland, water, forests and fish. Scarcities can arise from resource degradation or depletion, from increases in population or consumption that raise resource demand, and from unequal resource distribution among social groups. These forms of scarcity interact in powerful ways. For instance, population growth combined with unequal access to good cropland has driven hundreds of millions of people around the world to ecologically vulnerable areas like the steep upland hillsides of Central America, the tropical forests of Brazil, and regions at risk of desertification in South Asia and the Sahel.

Once there, the migrants often severely damage the land because they are poor and because their population densities are too high. This land degradation makes the migrants poorer yet, and they often join violent rebellions against local or national governments. Such processes have helped propel the Communist insurgencies in the Philippines and Peru and the recent rebellion in Chiapas, Mexico.

Of course, scarcity does not have to have such dire results. Many societies adapt well, without undue hardship for their populations. They do so by supplying enough ingenuity in the form of new technologies and new and reformed social institutions -- like markets, clear property rights and rural development banks -- to alleviate the hardships caused by scarcity. The critical question is, what determines a society's ability to supply this ingenuity? The answer is complex:

different countries, depending on their social, economic, political and cultural characteristics, will respond to scarcity in different ways.

In the next decades, scarcities of renewables will affect many regions in the developing world at a speed and scale unprecedented in history. These changes will drive up the need for all kinds of ingenuity. Simultaneously, though, the supply of ingenuity will be constrained by a number of factors, including the brain drain out of many poor countries, their limited access to capital, and their chronically weak states. Most importantly, the supply of ingenuity will be vulnerable to stresses generated by the very resource crises the ingenuity is needed to solve. This is because scarcity often causes intense rivalries among interest groups and elite factions that impede the development and delivery of solutions to resource problems.

Our team's research therefore suggests that some societies face a widening "ingenuity gap" between the need for and the supply of ingenuity. A country with a serious gap will see rising social dissatisfaction and increased stress on marginal social groups, such as those in ecologically fragile rural areas and urban squatter settlements. A serious gap will eventually cause major social changes like declining food production, reduced economic production, and large population movements.

If this process continues unchecked, the country may fragment as the state becomes enfeebled and peripheral regions come under the control of renegade authorities and warlords. Serious civil strife will, of course, further debilitate what remaining capacity the society has to supply ingenuity in response to the original scarcity, especially by causing capital to flee. Countries with a critical ingenuity gap therefore risk entering a downward and self-reinforcing spiral of crisis and decay.

Examples are easy to find. In Haiti, the irreversible loss of forests and soil in rural areas deepens an economic crisis that spawns social strife, internal migration, and an exodus of boat people. Less than two percent of the country remains forested, and the last timber is being felled at four percent per year. As trees disappear, erosion follows. The United Nations estimates that at least 50 percent of the country is affected by topsoil loss that leaves the land "unreclaimable at the farm level." So much soil washes off the slopes that the streets of the capital, Port-au-Prince, have to be cleared with bulldozers in the rainy season.

The current calamity in Rwanda is powerfully driven

by severe land scarcity. Rwanda has 8 million people crammed into an area the size of Vermont. Its population doubles every 20 years. Extreme nutrient depletion affects half the soil in the country, and agricultural production per capita fell by almost 20 percent between 1980 and 1990. The land competition fuels vicious ethnic animosity between Hutus and Tutsis, and the collapse of civil order has made the country completely incapable of dealing with its underlying scarcity and population problems. Kaplan's vision seems disturbingly accurate.

Optimists might argue that Haiti and Rwanda are anomalies that do not represent the generally improving trend around the world. But our research suggests that giant countries -- including India and China -- are vulnerable to similar pressures. This is not the received wisdom. In the case of China, for example, many experts have been distracted by the phenomenal economic expansion in the coastal areas; they have tended to project these trends onto the rest of the country and to neglect the dangers posed by resource scarcities.

The costs of misreading of the Chinese situation could be very high. China has over a fifth of the world's population, a huge military with growing power-projection capability, and unsettled relations with some of its neighbors. The effects of Chinese civil unrest, mass violence, and state disintegration could spread far beyond its borders.

Only two poor populous countries in the world have less arable land per capita than China: Egypt and Bangladesh. In fact, 300 million people in the interior have even less than Bangladeshis. The country can no longer significantly expand irrigated and arable land. Continued population growth and loss of cropland therefore mean that China will have 25 percent less arable land per capita by 2010. Moreover, the remaining land will often be of declining quality: every year the country loses as much nitrogen and phosphorous from soil erosion as it applies in inorganic fertilizer.

In past decades, the Chinese have sharply raised their farming yields. In the future, they will have to be evermore ingenious to produce evermore food from ever less land. Many experts and senior authorities in China are frightened by the resource situation, believing the country has already crossed key thresholds of sustainability. "Grain" is a constant preoccupation of the leadership, and imports even into rich areas may soon be necessary. Already, tens of millions of Chinese are trying to migrate from the country's interior and northern regions, where water and fuelwood are

desperately scarce and the land often badly damaged, to the booming coastal cities. We can expect bitter disputes among these regions over migration and water sharing.

Population and resource pressures led to widespread civil violence in China during the Ming and Qing dynasties. The current regime therefore recognizes that such pressures will cause mounting grievances in the worst affected regions. The only realistic policy is to permit movement of surplus labour to the wealthy coastal cities. Coastal areas must therefore be allowed to continue their rapid economic growth. But the Beijing government will have great difficulty maintaining economic and political control over this process.

Long-term stability is more likely if China begins serious democratization soon. However, Beijing will probably refuse to recognize its loosening grip on society, which will eventually prompt secessionist movements in Moslem lands to the west and Tibet in the South. Sichaun may also seek independence. As Jack Goldstone of the University of California says, "Once the glue of unified communist rule dissolves, China may once again, as it has so often in its history following the fall of unifying dynasties -- experience a decade or even century-long interregnum of warring among regional states."

China is a complicated and resilient society. We cannot say for sure what its future will be like. But Marcus Gee's unnuanced optimism does not advance our understanding of cases like China. Robert Kaplan, on the other hand, has presented an entirely plausible vision of the future for some societies. While we may all hope he is wrong, we must take seriously the possibility that he is right.