

The future is not another country

The future has long been an obsession. As a child, I dreamt about living in the year 2000. What a milestone! At that time, the 21st century seemed not without doubt and fear, but I felt optimistic. I looked forward to the science fiction stuff. But in the last two decades a different scenario has emerged, far darker than those in the books of my childhood.

I have long worried about World War III. In 1966 (aged 11), I remember wondering if WWII was about to start, because it was then 21 years since WWII had ended, the same period that separated the first two global wars. The Korean War, the Pugwash movement, McCarthyism, the Cuban missile crisis, the assassination of Martin Luther King (probably state-sanctioned; see *An Act of State*, by William Pepper), the Vietnam War and the Watergate scandal bled into a shared and common sense of apprehension, culminating in the 1980s. My apprehension diminished during the Reagan-Gorbachev meeting in Reykjavík, Iceland, and relaxed further by the ending of the Cold War.

But in my mind, more fundamental drivers of conflict remained unaddressed. Global population was then about five billion, climate change had emerged as a legitimate issue, and the fragile upward trajectory of much of Africa was clearly reversing. I didn't know it at the time, but, under the influence of the Reagan administration, the U.S. National Academy of Science (NAS) had just published a major report into the issue of population growth rates and its potential to influence economic "takeoff." Despite vigorous, but minority dissent, the NAS report surprisingly concluded that population growth was unimportant for development, thus overturning not only the conclusions of an earlier NAS report (1971), but the wisdom of a whole generation of development economists.

Flycatcher wisdom

The 1986 NAS report helped to legitimize the reduction in foreign aid (including for family planning) that followed the election of President Reagan (another of Reagan's decisions was to remove the solar cells from the White House, installed by his

predecessor). It also helped to shift George Bush Senior from his previous view. Following a lineage that included Presidents Kennedy, Johnson, Nixon and Carter, the elder Bush had also once thought that population mattered. In 2001, Birdsall et al. published *Population Matters*, a book which goes a long way to restoring this older wisdom, once commonplace among demographers.

Population also matters to other species. For example, researchers of the collared flycatcher, in Sweden, have observed that these birds observe both the number and condition of nestlings in their potential neighbours' nests, before deciding whether to settle. If the neighbours are doing well, settlement is desired; if not, they will move on (*Science*, 2002, **297**:1168-71).

What (I hope) seems common sense to the reader was apparently not as clear to the compilers of the NAS report, nor to the current Australian Minister for immigration, who is on record as saying that human carrying capacity is a meaningless concept. But how different is the assessment of the human to that of the flycatcher? Why are there no long immigration queues seeking settlement in Rwanda?

Global population forecast

The most recent report of the UN Population Division (2002) has again reduced the medium estimate of peak global human population, from 9.3 to 8.9 billion, a downward revision of 400 million. Quite a drop in the two years since its previous estimate. Watch this space for further downward revisions, as humans collectively realize that their living standard, and perhaps survival, depends on not converting every last scrap of nature into something which humans can use.

However, the rapid decline in global population growth rates is not all good news. Quite a bit is explained by an "irruptive" pattern, that is a zigzagged pattern of population boom and bust, especially in parts of sub-Saharan Africa, because of HIV/AIDS. In Rwanda, James Gasana, former Rwandan minister for agriculture, recently noted that,

in fact, overpopulation was a factor in the Rwandan genocide.

West Africa, oil and ethnic conflict

I'm writing this during the early stages of the battle for Baghdad. I suppose the invading force will soon control Iraq. But almost unnoticed, last night's news mentioned that oil production in Nigeria has been halved because of "ethnic conflict." In 2001, more than 500 people were killed in Jos (the capital of Plateau state, once optimistically dubbed by the Nigerian minister for tourism as the "Switzerland of Nigeria"). I lived in Jos in 1985, and my memory is of a rather sleepy, dusty town.

However, as resource pressure and expectations increase, the large and disgruntled population of Nigeria, long misruled, might yet follow the trajectory of southern Africa, though probably its higher rate of male circumcision will impede the penetration of HIV/AIDS (no space to discuss that here, I'm afraid!). Côte d'Ivoire, considered a model West African state, is in an even worse condition than Nigeria, having suddenly passed an undesirable threshold, triggered in part by an attempt to change the electoral rule to disadvantage recent settlers.

Sudden shifts

This concept of threshold changes (e.g., water turning to ice at freezing point) is commonplace in nature, and indeed human experience (for example phrases such as the "last straw" and "the weakest link."). Every riot policeman must have a gut understanding of thresholds. Yet, perhaps because the mathematics is more difficult, non-linearities are curiously absent from most forms of social science. This is an almost crippling intellectual deficiency, which must surely soon be corrected.

It is adverse thresholds that most worry me. Whether related to crop yields and climate, population pressure and conflict, or mosquito density and the emergence of malaria, threshold effects are ubiquitous, yet, usually better recognized in retrospect. But thresholds can also bring positive change, and if we are lucky, a threshold effect may yet save us, including from WWII. (References on request.)

Late-breaking news

We regret that Tenpa TK resigned his position as BODHI's India Field Representative on March 31. We thank him and wish him well. Of the Mass Health Awareness Campaign Tenpa writes, "From the general pattern of inflow of patients at the hospital, it is evident that people have understood what we have said and more important they have been trying to practice what they see now as healthy habits. Because of these, we have much less number of diarrheal patients. People are generally talking about hypertension, diabetes, especially the middle aged and the elderly and come for regular check ups. They always have many questions to ask our staff about general health issues and diseases. They have new found faith in our hospital and staff. The general environment in the settlement has changed considerably. People do think twice before they dirty any public place ... This is more than I expected." Story and photos in next newsletter.