

## The opposition's rebuttal remarks

Oct 22nd 2010 | [Vaclav Smil](#) 

The myth of accelerating progress has become almost axiomatically fashionable, but it is a categorical error that arises from treating a particular process (indisputable improvements in the performance of electronic gadgets) as a valid proxy for all technical and social developments. Just three random examples illustrate a widespread absence of any acceleration.

1. Internal combustion engines (an invention of the 1880s) are still the dominant prime movers in private transport. Improved, no doubt, but fundamentally they are still as Benz and Maybach and Diesel made them and during the entire 20th century their efficiency has only doubled, and nearly all of those gains took place before 1960 with no acceleration afterwards.
2. During the past decade major pharmaceutical companies have experienced increasing difficulties in commercialising new effective drugs and have had to withdraw many that were initially touted as great saviours. An even more worrisome fact is that only one or two antibiotics now stand between us and some virulent bacterial infections, as few new compounds have been deployed recently to fight infections. There has been no acceleration of efficacious and affordable drug choices.
3. Scientific literacy, numeracy and comprehension skills have been declining as a direct result of fractured e-communication and a gradual loss of ability or readiness to read anything longer than a website paragraph (many have made this point, but Hal Crowther's essay in the summer 2010 edition of *Granta* stands out).

As for all those achievements and promises of medical innovation that have been made possible by greater computing power, let us look more closely at what they have done to improve our quality of life. No other country has a larger number of those marvellous MRIs and other electronic diagnostic tools than does America, a nation that spends a ruinously high (and obviously unsustainable) share of its GDP on health care. Yet now it ranks 49th in life expectancy and some two-thirds of its citizens are either overweight or obese, rising numbers of them morbidly so. In contrast, many nations have achieved remarkable gains in quality of life with relatively simple dietary and primary health-care improvements.

What has all that computer-based DNA sequencing done to keep our health costs from rising (bloating health bills threaten long-term budgets of all affluent countries), to lower the epidemic extent of childhood and adult obesity, or to make the millions of everyday decisions made by family physicians more effective? Touting a prospect of individually tailored drugs is irresponsibly abstract wishful thinking as most countries, saddled as they are with enormous debts and rising health-care costs, are increasingly trying to convert to cheaper generics from more expensive mass-produced but branded drugs. I recommend spending a day in a family physician's office (I know—my wife is one of those on the real, not DNA-based, front line of health care, listening to people with problems) or in a protein-crunching and synthesis lab (again, I know—my son does his research in one of those, trying to identify what will work) to judge the likelihood of individualised drug therapies being available any time soon to (for a start) a billion people in affluent countries.

I do not think that life in the pre-computer era of the late 1950s or the early 1960s was a valley of tears. Simpler, yes—but poorer? Does the ownership of gadgets in general and e-gadgets in particular make us rich and content? One useful measure tells the story (thanks to the persistence of the Gallup organisation): the share of Americans who considered themselves very happy was 53% in September 1956 and 49% in December 2006, even as their personal computing powers increased infinitely (they were zero in 1956) and the nation's institutional computing powers increased by more than 12 orders of magnitude.

Replacing all work by computer-driven processes is patently a most undesirable dream while masses of people are already unemployed; and the e-dreamers forget that not everybody has the intellectual endowment to run consulting companies or to retail stories of e-nirvana. Most definitely, we do not need n-dimensional computers in order to build humane, reasonably equitable and caring societies. How will the capacity for n-dimensional manipulations reduce the number of broken marriages, abused children, beaten women and drug-addicted adolescents? How will it lessen the numbers of incarcerated young men or the hatreds of *jihadi* terrorists? How it will make us more humane?

Our survival does not hinge on further development of computing but on fostering co-operative solutions, on promoting necessary compromises among nations and among adversary groups, and on striving to keep our individual and collective claim on the biosphere from overwhelming its life-sustaining services. None of these actions require any computing power, merely a modicum of sapience and compassion.