

Future shocks and present woes

Imagined Worlds

by Freeman Dyson

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Oliver Morton

If you were to ask so-called 'hard' science fiction writers — the ones who try to maximize the boggling of minds while minimizing the flouting of known science — to name their favourite scientist, Freeman Dyson would stand a good chance of coming top. It's easy to see why. Dyson has a startlingly profound imagination, a willingness to take ideas as far as they can possibly go.

He suggests that truly advanced civilizations will one day encapsulate whole suns so as not to waste energy; and he worries about whether there can be enough unanswered questions in the world to keep immortals interested. In this book he provides a fascinatingly plausible view of artificial telepathy. He has helped to design extraordinary spaceships and advised the Pentagon on wild (and no doubt occasionally woolly) weapons. Best of all, from the science-fiction writer's point of view, he admires science-fiction writers. This book is, in part, a tribute to science-fiction; it is an attempt not to predict the future, but rather, through imagination, to bring some of its potential to life.

Like Dyson's earlier book, *Infinite in All Directions* (Harper and Row, 1988), *Imagined Worlds* is based on a series of lectures, in this case given at the Hebrew University of Jerusalem in 1995. At its heart are three prophetic chapters, one on science, one on technology, and one on both of the above and more-or-less everything else. As a curtain-raiser he offers a set of anecdotal arguments as to why it is best to let the future work itself out through trial and error, rather than trying to force its pace for any ideological reason. And as a tail-piece he considers some of the ethical issues his futures open up.

Those who have enjoyed Dyson's previous books will find much of this one familiar — happily so in the elegance of its expression and the range of its interest. Although the examples and targets are different, the ideas illustrated and attacked are the same as they have been since he started writing. The preference for trying lots of small things rather than a few big things is vintage Dyson (and will not be very popular with those of his Princeton University neighbours who are fierce advocates of vast tokamak fusion reactors).

His belief in biotechnology as something much more than a source of medical advances — as a source, for example, of pet dinosaurs, their genetic blueprints worked out from scratch rather than recovered from

amber, of factories that eat their own effluent, of potatoes designed to grow on Mars — is another old favourite. So is the vision of human life spreading throughout the planetary system, into the Kuiper belt, the Oort cloud and eventually to other stars. This is another version of Dyson's 'small and many is best' philosophy, one in which people with different ideas of what it might be to be human, or post-human, simply put a few light hours between their cometary homes and agree to differ.

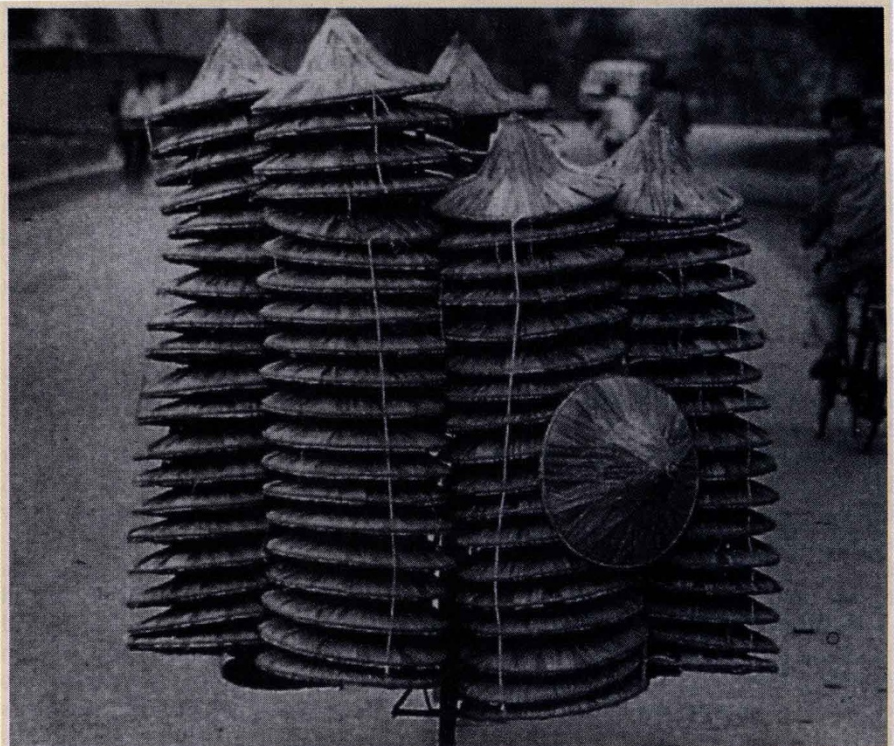
There are few other writers who would allow themselves to cover such a range. In Dyson's youth there were rather more: H. G. Wells and his heirs, J. B. S. Haldane, Desmond Bernal, Olaf Stapledon. They were writers on science who, having looked into the abyss in the First World War, were willing to look into the depths of the future with strange mixtures of faith and pessimism. Dyson is the heir not just to their range, but also to some of their pessimism — and it is that pessimism which is responsible for the book's major flaw, its treatment of the present.

Dyson quotes with approbation G. H. Hardy's view that "a science is said to be useful if its development tends to accentuate the existing distribution of wealth, or more

directly promotes the destruction of human life". He similarly subscribes to Haldane's claim that "the tendency of applied science is to magnify injustices until they become too intolerable to be borne". These are strong claims, more shocking to most of Dyson's peers, I would imagine, than they would have been in the Cambridge of the 1920s and 1930s; they require considerable justification if we are to take them seriously. And that justification does not arrive.

Dyson sees the parts of the world he has lived in as being in serious decline. "In the 50 years since [Wells] died, England has gradually reverted to a class system with inequalities almost as sharp as those that he fought against as a young man and lampooned in his novels." The United States, too, is going downhill, and Dyson believes that the social disintegration he has observed since moving there 50 years ago is largely due to the effects of technological change derived from scientific progress: "Because of science, children deprived of legitimate opportunities to earn a living have strong economic incentives to join gangs and become criminals."

There are two problems here. One is that some of these observations are just wrong. The United Kingdom is not as equal a society



Hats off to the bike

The bicycle has been an enduring technological success story. World bicycle production has been on a steadily upward trend for most of the postwar period. In China (above) bikes are still

the most common delivery vehicles. The social and technical history of the subject is explored in the profusely illustrated book, *The Bicycle*, by Pryor Dodge (Flammarion, £35, \$50).