

THE Ecologist

VOLUME 30 NO 3 £3.50

RETHINKING BASIC ASSUMPTIONS

MAY 2000

THE SIGER

ON WHERE THE
WORLD WENT
WRONG

MORI

EXCLUSIVE POLL:
Britain says
NO to the WTO



MENINGITIS

What doctors
don't tell you

FIGHTING TALK

Charles Secrett on why
dialogue works best

VIVISECTION

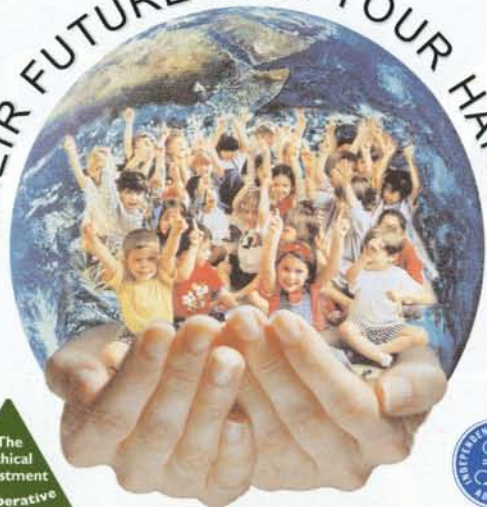
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bogus science?



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The Breakdown of Climate
Human Choices or Global Disaster?

Peter Bunyard

El Niño, the collapse of the Gulf Stream, devastating hurricanes and floods ... many natural disasters have been linked in recent years to global warming and other climatic changes. Are these events part of a natural cycle or have we really reached the limits of Earth's ability to perpetuate these cycles?

The Breakdown of Climate depicts how human activities have influenced weather patterns and created imbalances throughout the natural world; imbalances which now pose a very real threat to human health, agriculture and existence.

The author addresses issues such as deforestation and environmental pollution, explaining how they are causing widespread damage beyond their places of origin. He creates awareness of the risks associated with some modern industrial and agricultural practices, and suggests alternatives that might allow the Earth to regain its natural equilibrium.

The Breakdown of Climate gives a clear overall picture of climate, from its origins to the present day, comparing the cause and effects of evolutionary changes with human influences. It explains how weather systems function, and how oceanic currents and tropical forests are vital in maintaining these systems. The author describes how natural systems perpetuate themselves, and are essential to our planet as a whole.

In the midst of a seemingly hopeless scenario this book offers hope to all those genuinely concerned about the increased violence and occurrence of natural disasters.

Peter Bunyard is one of the founding editors of The Ecologist and a writer and lecturer on ecological issues.

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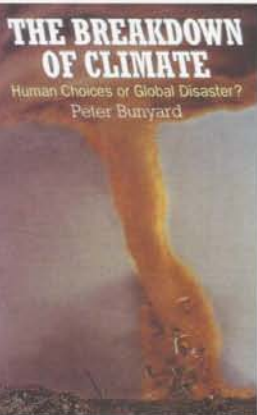
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BEHIND GOD'S FAÇADE

The Antichrist is alive, well and campaigning furiously to undermine the Catholic Church according to Cardinal Giacomo Biffi, Archbishop of Bologna, who is the main contender to succeed Pope John Paul II. The thing in question is neither seven-headed, nor a beast. Rather, he warned, the Antichrist is a 'man of immense charm' equipped with a 'fascinating personality', and a general 'plausibility' that has 'deceived his enemies'. Though Biffi refused to confirm the identity of the Antichrist, he made it clear during his talk at a conference in Bologna that he had a prominent figure in mind.

But how has Biffi achieved this monumental task? With the help of my associates at *The Ecologist*, similarly convinced that the world's current predicament is due to the workings of an Antichrist, I too have tried to pin down the identity of the Beast. The obstacle we faced was that there are just too many candidates for the label. Indeed it is as if Antichrist has already harnessed the winds of change that elevated Dolly to international stardom.

I began by reading through the largely forgotten texts of the Book of Enoch, and found immediately what is almost certainly a reference to the World Trade Organisation summit in Seattle last year. 'And Semijaza [Moor], who was their leader, said unto them: "I fear ye will not indeed agree to do this deed, and I alone shall have to pay the penalty of a great sin." And they all answered him and said: "Let us swear an oath, and all bind ourselves by mutual imprecations not to abandon this plan but to do this thing."...And they were in all 200 who descended on the summit of Mount Hermon[Seattle]. Surely one prominent contender then must be Michael Moor,

'the leader among them'. It would be a hard task to find an organisation whose *raison d'être* is more in line with the undermining of life on Earth, and more in conflict with the interests of its inhabitants. What's more there are plenty of candidates for the role of disciple, the WTO being as it is a platform for the promotion of big business.

Which brings me to the next contender. Enoch's fallen angels were embarking on a mission that besides the usual fornication involved the 'corruption of all things' and more specifically making mortals 'acquainted with plants'. Who else but Monsanto's Shapiro could Enoch have had in mind? Cunningly disguised now as a German CEO of a 'new' corporation, Pharmacia, his is a mission of which an Antichrist of old would barely have dared to conceive. Monsanto/Pharmacia has set its sights, indeed has already initiated, the corruption of the natural world through its constituent

parts, the genes. Under the guise of improving God's grossly inefficient creation, and equipped both with the backing of leading politicians and an enormous propaganda budget, due we are told to increase dramatically during the coming summer, Monsanto looks set to cause chaos on Earth.

And there is Tony Blair. He is both fruitful and multiplying, much to the horror of the Conservative party. A devout Christian, he has great personal charm, and a 'deceptive plausibility'. He and his henchmen are committed to enabling big business to flourish, even risking a loss of votes in the case of genetic engineering. And he too is part of the cult that mistakenly believes McDonaldisation to be an evolutionary necessity.

If desecration of God's creation is the priority for any Antichrist, then we would have to consider the qualifications of some key members of British Nuclear Fuels. That organisation has placed great chunks of the planet on the razor's edge of catastrophe. It has been linked to the death by cancer of many thousands of people. Moving on, we couldn't fail to mention President Clinton, another charmer. Who else but an Antichrist would risk world war in a nuclear age in order to divert attention from his libido? Sir Richard Doll, who declared that asbestos, Agent Orange, radiation emission, power lines and numerous pesticides are safe, and who has through the results of his 'research' undoubtedly helped these monsters to flourish, is yet another serious candidate.

Astonishing then, with so many possibilities, that Cardinal Biffi chose to identify the beast as an ecological philanthropist, concerned with human rights and promoting dialogue between the various Christian denominations and other religions. Besides sounding strikingly similar, as a number of our readers have pointed out, to our own Edward Goldsmith, founder of *The Ecologist*, Biffi's Antichrist is more of an Anticlimax, and certainly an Antidote. With a global environment in tatters, the health and wealth of the world's people in ruins and social harmony at an all-time low, one would have thought that the least obvious choice of Antichrist would be someone attempting to reverse these ungodly trends.

Certainly Biffi's priorities are thrown into question. Could it simply be that he is a throwback to ancient times? Catholic history, like most, has its share of torture, abuse and wholesale destruction. It has been said that the Gods of one civilisation invariably become the demons of the next.

Or could it be that Cardinal Biffi is himself the Antichrist, pushing for ecological and social breakdown worldwide, while hiding cunningly behind this Godly façade?

ZAC GOLDSMITH



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Founder **Edward Goldsmith**
Editor **Zac Goldsmith**
Deputy Editor **Paul Kingsnorth**
Managing Editor **Malcolm Tait**
News Editor **Lucinda Labes**
Campaigns Editor **Stephanie Roth**
Science Editor **Peter Bunyard**
Distribution Manager **Sally Snow**
Marketing Manager **Kate de Bass**
Art Director **Chris Gregory**
Publisher **Ian McAuliffe**

Editorial Office: Unit 18, Chelsea Wharf,
15 Lots Road, LONDON SW10 0QJ, UK.
Tel: +44 (0)20 7351 3578 Fax: +44 (0)20 7351
3617 Email: editorial@theecologist.org
www.theecologist.org

Associates

Agnes Bertrand, Institute for the Relocalisation of the Economy, France; **Marcus Colchester**, World Rainforest Movement, UK; **Samuel Epstein**, University of Illinois, US; **Sally Fallon**, The Weston A Price Foundation, US; **Mae-Wan Ho**, Open University, UK; **Mohammed Idris**, Consumers' Association of Penang, Malaysia; **Martin Khor Kok Peng**, Third World Network, Malaysia; **Sigmund Kvaloy**, Ecopolitical Ring of Cooperation, Norway; **Kalle Lasn**, Adbusters Media Foundation, Canada; **José Lutzenberger**, Former Minister for the Environment, Brazil; **Jerry Mander**, International Forum on Globalization, US; **Patrick McCully**, International Rivers Network, US; **Robin Page**, Countryside Restoration Trust, UK; **John Papworth**, Fourth World Review, UK; **Jakub Patocka**, Literarní Noviny, Czech Republic; **Jeremy Rifkin**, Foundation on Economic Trends, US; **Charles Secrett**, Friends of the Earth, UK; **Vandana Shiva**, Research Foundation for Science, Technology and Ecology, India; **David Suzuki**, David Suzuki Foundation, Canada; **Richard Willson**, The Times, UK; **Tracy Worcester**, ISEC, UK

Editorial Board

Steven Gorelick, Helena Norberg-Hodge, John Page, all of the International Society for Ecology and Culture (ISEC). For more information, contact (UK) Tel: +44 (0) 1803 868 650 (US) Tel: +1 (510) 548 4915

The Ecologist special issues

Editor **Edward Goldsmith**
Editor's PA **Rita Kassai**
Deputy Editor **Simon Rettallack**
Research **Stephanie Roth**
46 The Vineyard, Richmond, Surrey TW10 6AN.
Tel: +44 (0)20 8332 0295
Fax: +44 (0)20 8948 6787

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Fax: +44 (0)20 7808 7536
Email: watchdog@thinkpublishing.co.uk

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PO Box 326, Sittingbourne, Kent ME9 8FA, UK.
Tel: +44 (0) 1795 414963
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COVER STORIES

'I'd like to start by saying the invention of the internal combustion engine was the single biggest disaster in history.' Sir Wilfred Thesiger, the last of the great pioneering explorers, explains why there is more to learn from tribal societies, and why his maps may have helped undermine them. **Page 30.**

Cover photograph by Guy Hobbs/Colorific!

At the hands of the WTO, the world's economies are undergoing a radical experiment, which will affect us all. Does the world find this acceptable? If the British public is anything to go by, according to our exclusive poll, the answer is a resounding NO.

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- ◆ Gorilla tactics: the great beasts of equatorial Africa are becoming pawns in a bigger ecological game.
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- ◆ Alternative cancer therapies: why won't anybody listen?
- ◆ An exclusive interview with José Bové, the activists' activist.



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Letters

The Ecologist welcomes correspondence on any subject. Contact us at:
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Email: letters@theecologist.org – please attach your name and postal address, even when sending by email. The editor reserves the right to shorten or edit correspondence where necessary.

RENEWABLE ENERGY

I would like to congratulate you on the excellent cover story *The Ecologist* ran last month, exposing the Labour Government's meddling in the energy market on behalf of the Clinton Administration.

One thing that Tony Blair and Bill Clinton have disregarded is the impact their actions have on the environment. The international energy market is developing and globalising fast. Energy use is rapidly increasing, especially in the Third World, providing exciting new opportunities. The future of the energy market must be green if we are to stabilise the effects of climate change. Tony Blair should be cashing in by creating a new energy industry for Britain based on renewable energy sources that are vast and as yet unhar-

nessed in this country. At present the jobs, export market and wealth are going to more adventurous nations.

Britain is missing out because Tony is too busy dancing to Bill's tune.

CHARLES KENNEDY MP
House of Commons, UK

MAPS OUT!

The following is an open letter to the director, National Aeronautics and Space Administration.

I spent eight years working on stopping highway construction, initially to reduce air pollution, but later also to protect wildlife. I came to the conclusion that roads are the largest single threat to wildlife. It is pretty difficult to do a lot of damage to wildlife and the environment,

without roads! After a while, I realised that I was wrong: roads cannot be built without the area first being mapped! Maps are actually the greatest threat to wildlife. Not only do they facilitate the construction of roads, but they make it easy for all manner of recreation, and scientists, to invade wildlife habitat, driving wildlife away from the resources it needs and leading to endangerment and extinction.

Humans think that they own, and have the right to dominate, every square inch of the Earth. This is the basic reason why wildlife, worldwide, is going extinct at an unconscionable and unprecedented rate. Your earth-mapping project is very misguided. We don't need more maps, we need to start demapping the scanty scraps of viable habitat that remain on the Earth, and pulling all human artefacts out of them, especially roads and trails.

MICHAEL VANDEMAN, PHD

Editor's reply: *You may be interested to read the thoughts of Sir Wilfred Thesiger, who expresses his own misgivings about map-making in our interview starting on page 30.*

STONE THE CROW

Nearly full marks to the new *Ecologist* for content, low marks for legibility. I suppose we elderly readers can't ask for too much!

But I want to take issue with John Papworth's *The Crow – Webb of Evil* (Vol 30 No 2). Indeed, the teaching of the LSE is now evil, providing as it does the ideological justification for The Project so ably deconstructed by Gregory Palast and, indirectly, by Tony Benn. But I don't think the Blairite 'vision' can be judged as an inevitable end to the process set in train by the democratically motivated socialists, trade unionists and such who together formed the Labour party a century ago. Rather, the Blairites took over, by a veritable coup, that instrument of 'people's power'. Likewise, to condemn the Webbs, George Bernard Shaw and the many, many others who went to the Soviet Union in its early days and saw good there – medical services, schools, revived universities and a populace immensely better off than in Tzarist days – because authoritarian rightist economists took over the LSE, is neither

Places of Peace

My mother, Mary Egan, née Twohill, lies dying below me in the modified ground floor bedroom. She would be upstairs but then there would be no possibility of getting outside in the wheelchair. Seventy years of work and affection, labour and love, all to end after less than a year from being diagnosed with cancer.

What is sad for me is not the state of cancer research or health care, or anything temporal. It is the thought of burying my beloved mother in a mere graveyard with so much other meat.

This letter is a suggestion, a request and even a plea for something different, something that looks forward while honouring the past, that houses the dead while supporting the living.

I need a wilderness park where my mother's ashes and a tiny bronze marker can be placed. A spot that is a joy to visit. Where living things thrive. Where my mother and her marker will eventually be consumed by the forest, hidden by leaves or smothered in moss, but never taunted by lawnmowers.

And I am willing to pay for access to this wilderness. And that is the point.

Bells should be ringing for environmental activists with entrepreneurial leanings.

This is the way for non-profit organisations to finance the acquisition and upkeep of wilderness properties. Not necessarily just huge tracts of inaccessible mountain but also small acreages in urban areas, where loved ones can truly be resting, where thousands of tiny monuments could be absorbed without disturbing the squirrels.

These modern 'ancestral burial grounds' could, and should, be in every community, creating a network of wilderness oases that travellers would seek out for their natural beauty. Places that the living actually want to visit. Places where no developer will ever dare tread.

My father is in a featureless field with a stone slab above his head in a graveyard where successive generations are 'stacked' on top of each other. He deserves better. I will do better for Mom.

A permanent wilderness park would be ideal. One that I knew would never be logged or sold off, with walking trails and abundant wildlife. But such is not available yet. I will have to be content with a tree planted on our property with two tiny brass markers hanging from the branches or tucked into the roots. Never completely out of sight, never far away, and never forgotten.

When I go let there be a noble place to rest. Let the proceeds from my passing support a growing network of wilderness reserves that are everything a final resting spot should be.

It is possible. It is practical. We need only create them and the world will be a better place for the living and the dead.

BRIAN DENIS EGAN
British Columbia, Canada

correct nor helpful. What we need now is not anti-Red ranting, but serious analysis of just what is disastrous for humanity in the present LSE approach to life. To describe Fabian Socialism, whatever its faults, as 'a gospel reducing the status of the individual citizen to that of a shopping mall customer' is arrant nonsense, considering the efforts made in many of the societies Papworth does not like, pre-eminently in ex-Yugoslavia, to encourage 'self-management' of enterprises and community institutions.

SIDNEY J HOLT

Powys, UK

TAKING A BATH

I am a new subscriber to your magazine and still discovering your wonderful world! You will perhaps then forgive me for asking what could be a typical newcomer's question, whilst everyone else is bent double with mirth:

Why do we have Marat bleeding to death in his bath as a leader for the letters page? Admittedly, he is still 'manly-ly' holding on to a letter. Is this a reference to the pains experienced by the editor when reading the post-bag or are we being warned that if we do write letters, we'll have to watch out for stray blades, particularly when enjoying a good read in the tub?

Perhaps it just seemed like a good idea at the time?

JOCELYNE FORTIN

Kingston, UK

Editor's reply: *While we express our deepest regrets on Marat's untimely demise during an otherwise pleasant bathing session, we nonetheless commend him for his dogged determination to correspond no matter the circumstances.*

TALKING POINTS

The debate between Vandana Shiva and Bill Emmott (Vol 30, No 2) made excellent reading. It is admirable that dissenting arguments should be aired in the pages of *The Ecologist*. Bill Emmott was lucid and persuasive, putting his case as well as possible. Thank goodness there is a flaw in it.

Like it or not, he argues, profit is the prime incentive for human behaviour and allocation of resources. That is not a problem if businesses are subject to the rule of law. As long as they are controlled by the appropriate restraints and incentives society will benefit more under a capitalist system than any other.

The flaw is that in any given social and legal environment where the profit motive

operates some businesses will do better than others, and the more successful they are the more effectively will they alter that environment in their favour. The inevitable end of the process is what we have now: giant corporations able to do pretty well what they like and a few niche businesses.

Unfortunately Vandana Shiva does not really address this problem. She describes the ideal world wonderfully, but simplistically. Modern societies cannot be reduced to peasants, tribal peoples, craftspeople and other autonomous producers. There have to be workers and larger organisations of some kind. It is not clear whether she still sees some role for the profit motive or not. If so, how can one prevent it taking over? If not, how can one prevent the state taking over? These are questions which she, and all of us on her side, must answer.

JEREMY FAULL

Cornwall, UK

GLOBAL ANSWERS

The WTO knows exactly where it's going.

(*Where next for the WTO?*, Vol 30, No 2).

NGOs are the ones who need to ask themselves the question.

Having reached the world stage at Seattle, they are now rightly being asked by the economic elite: 'OK, you want reform, but what specifically do you propose?' Apart from generalities, so far we are still awaiting answers.

In developing answers, surely we need first to accept that we live in a world of nations at dramatically different stages of economic development (to say nothing of other differences). To abdicate national responsibility for trade, labour or environmental issues to the WTO or any other

supranational body and to expect it to come up with, adjudicate on and enforce rules that are fair to most, let alone all nations, is therefore patently ridiculous.

Furthermore, the underlying basis of the neo-liberal global economy is competition. The ability of capital and corporations to move, or merely threaten to move investment and jobs elsewhere now means that nation states and politicians are no longer in control of the global economy but are themselves subject to its competitive forces. It should be clear that global competition is not a basis upon which fairness, environmental or labour protection can result. After all competition is not about fairness – it's about winning. Simply reforming the WTO – whatever that may mean – or hiving off what should be national decisions to other supranational bodies will neither change nor stop the underlying forces of competition. NGOs will therefore need to search a little deeper if they are to find a coherent answer.

Neither of much help in that search is the assertion that any big idea must necessarily be rejected simply because it is big (*What's the Big Idea?* Vol 30, No 2). After all, even Schumacher himself in *Small is Beautiful* recognised that 'We need the freedom of lots and lots of small, autonomous units, and, at the same time, the orderliness of large-scale, possibly global, unity and co-ordination'.

Indeed, in the age of globalisation, surely a new idea with global implications is likely to be at least a part of any answer.

JOHN BUNZL

International Simultaneous Policy Organisation, London, UK

Just a Quick Word

DRIVEN TO ILLNESS

While reading the article *Traffic Kills* (Vol 29 No 6) I thought it would be interesting to know if there is a strong correlation between lung cancer mortality and the number of the driving licences in the US. I have compiled information on this subject: the licence data is from US Department of Transportation and the cancer data from www.cancer.org. To see these correlations please see www.megsinet.net/turgut.

TURGUT DINCER

WTO RULES UK?

A Government spokeswoman said: 'Whatever people's attitude to GM crops, they will be shooting themselves in the foot if they trash the trials because the World Trade Organisation will not let us ban them unless we can prove they are a danger to health and the environment.'

Perhaps it is high time we forced a determination as to who rules this country, our Government or the WTO!

SKY MCCAIN

BSE: a new line?

Everyone knows the official line on BSE: that the disease was caused by feeding infected sheep and cattle remains to cows. But a British farmer has a different theory; one that the powers that be are going to great lengths to silence.

Mark Purdey, of Somerset, believes that BSE isn't caused by infected meat protein at all, but by the use of organophosphate insecticides, which British farmers have been legally obliged to apply to their cattle twice a year since 1982 as a warble fly deterrent.

It all started when Purdey noticed that his own organically reared cows, that he refused to treat with organophosphates, never developed BSE, whilst treated cattle brought onto the farm did. He decided to investigate.

Soon, he noticed a pattern. He found that the only countries besides Britain to suffer from BSE epidemics were those in which organophosphates had been used. On the other hand, the Middle East, that had imported thousands of tons of Britain's allegedly infectious cattle feed, had no BSE.

For Purdey, the assumption that one ani-

mal has to eat another in order to catch the same disease doesn't make sense. For if that is the case, how do you explain the lifelong vegetarian that contracted nvCJD in France? Scrapie-infected sheep don't eat each other. Neither do the wild populations of deer in the Rocky Mountains who have contracted chronic wasting disease (the BSE equivalent in deer).

Surely, the more likely explanation is that 'the various different species of mammals suffering from the same disease have all been exposed to the same causal factor in the environment,' says Purdey.

But it is an explanation that the British government seems unwilling to explore. Purdey's findings have been dismissed by the National Office of Animal Health (NOAH) – a lobby group representing the UK animal medicine industry. In a recent BSE enquiry report, they say Purdey's facts 'do not add up' and that clinical trials carried out by independent experts show no link between OP use and BSE. But Purdey claims the group has 'twisted the truth,' and points out that NOAH's quoted 'independent expert', Dr David Ray, has received funding from organophosphate manufacturers Zeneca.

'If organophosphates can be proved to have caused BSE, their worldwide use could be put into jeopardy, costing the chemical industry billions. The government know more than they're letting on,' says Purdey darkly.



Mark Purdey: his life is at risk

Certainly, someone, somewhere wants Purdey silenced. Since taking up his theory, Purdey's life has been at risk. His house was mysteriously burnt down, a structurally sound barn collapsed

onto his science library, he's been shot at and, following the publication of an *Independent* newspaper article in 1993, found his telephone lines cut – preventing him receiving follow up media calls.

Next month Purdey will meet junior agriculture minister Baroness Hayman to discuss further research into his theory.

Satellites crash and burn

NASA will have to crash land a space observation satellite to stop it showering huge chunks of burning metal across the globe.

The Compton gamma ray observatory satellite studies mysterious explosions in space. But now, a failure in one of the three gyroscopes that keep it pointing the right way means it could go dangerously awry and plummet back to earth.

Compton, which is as large as a railway engine, would not burn up, like most space debris, but would land with the force of a substantial meteorite. NASA hopes to bring the satellite down in the Pacific ocean.

The Compton failure is just one in a long line of mishaps at NASA where staff complain that they are being forced to work too hard to keep up with an ambitious programme.

Bankrupt Washington telecoms firm, Iridium LLC, is mired in a similarly wasteful mess. Its satellite-based mobile phones have proved too clunky and expensive for consumer tastes, so the failed company has decided to blow up 66 of its satellites in space, to the tune of \$5bn to \$7bn.

Meanwhile, on the north-west coast of Guyana, Texan satellite group Beal Aerospace want to build a satellite launch pad in a dense tropical jungle. The Bharat Jagdeo Regime approves of the plan, despite the fact that the prospective land sale would rob indigenous people of their homelands.

Beal has already had its attempts to build a similar station on Sombrero Island in the British West Indies foiled. Despite Beal's claims to have conducted 'a detailed environmental assessment, involving more than two years of study and hundreds of thousands of dollars,' the British government stopped the construction on environmental grounds.



PHOTO:SC

What a choice

According to an EPA study conducted in conjunction with the UN Task Force on Global Developmental Impact, consumer-product diversity now exceeds biodiversity.

'Last year's introduction of Dentyne Ice Cinnamint gum, right on the heels of the extinction of the Carolina tufted hen, put product diversity on top for the first time,' says study chair Donald Hargrove.

The sharp rise in consumer diversity – with more than 200 million new purchasing options since 1993 – comes as welcome news to all those who have been upset by the dwindling number of species populating the earth.

'As more and more species fall victim to extinction, we face a grave crisis of decreased diversity, not only in America but across the globe,' Hargrove said.

'But the good news is, these losses in biodiversity are more than offset by a corresponding rise in consumer-product diversity. Though flora and fauna are dwindling, the spectrum of goods available to consumers is wider than at any time in planetary history. And that's something we can all be happy about.'

GM propaganda alert!

The Biotech industry has declared war.

In a desperate bid to salvage their unpopular products, rival GM producers are clubbing together to finance a full scale media campaign. Over the next five years the GM alliance, which calls itself the Council for Biotechnology Information, and includes Monsanto, Dupont and Novartis, will spend up to \$250mn on bill boards, TV ads, a

website and information line. 'From the conversations we've had with people, the more access they've had to information... the more likely they are to embrace the technology,' said Monsanto spokesman Jeff Bergau. According to Sue Mayer, however, the opposite is true, as illustrated by the backlash last year following Monsanto's first attempt at providing 'information'.



STILL PICTURES

Trojan Fish

Fish, which are genetically modified to grow larger and faster than their unmodified relatives, could cause havoc in the wild, say geneticists at Purdue University.

The trojan fish would attract four times more mates than their diminutive peers. But because the GM fish engineered at Purdue also die quickly, the introduction of just 60 giant GM fish into a shoal of 60,000 wild fish could cause extinction within a decade.

Ecology: a God?

Is deep ecology a religion? American loggers say it is, and that federal attempts to protect forests on behalf of environmentalists are unconstitutional on these grounds.

The Minnesota loggers, who filed their unusual suit against the Forest Service and the New Mexico environmentalist group Forest Guardians last September, say that by supporting 'deep ecologists,' the government violates First Amendment protections that prohibit the government from favouring one religious group over another.

The term 'deep ecology' was first coined by Norwegian philosopher Arne Naess in 1973. Naess wrote up a treatise describing the eight principles of deep ecology, which contends that nonhuman life has value 'independent of the usefulness of the non-human world for human purposes.'

Although the Forest Guardians may speak of trees in reverential terms, the idea that 'deep ecology' is a religion will be hard to prove. 'As far as I can see there is no Mother Earth, or Isis involved,' says University of Minnesota law professor Michael Stokes Paulsen, an expert on religion and the Constitution.

Legal scholars dismiss the case as 'absolutely frivolous.' In fact, 'I wouldn't be surprised if [the loggers] wind up having to pay the defendants' court costs,' says Paulsen.

Viagra hunters wipe out goats

Hunters on the quest for a natural form of Viagra have killed off the last of a pair of endangered Arabian mountain goats.

According to United Arab Emirates folk lore, eating the meat of the tahr goat restores a man's sexual potency. 'Even

younger people have begun hunting the tahr, which has disappeared,' reported environmental researcher Moadh al-Sawaf, in the Gulf News. 'The last two were killed by hunters and no one has spotted another of their kind anywhere in the mountains.'

EX-CARBIDE CHIEF LEGS IT

Victims of the 1985 Union Carbide industrial disaster in Bhopal have filed a new lawsuit against the chemical company and its former chairman Warren Anderson. But when attorneys sought out Mr Anderson for questioning, he was nowhere to be found. Lawyers at New York firm Goodkind, Labaton, think Anderson has gone to ground. 'We keep trying,' said attorney Kenneth McCallion; 'We have people out looking for him.' The complaint alleges that 'Union Carbide demonstrated a reckless and depraved indifference to human life' and that 'the defendants are liable for fraud and civil contempt.'

UK SAYS NO TO THE EURO

The Democracy Movement, Britain's largest anti-Euro lobby group, has seen its membership rise from 8,000 to 150,000 in just two years.

NADER FOR PRESIDENT

Veteran green, Ralph Nader, will run for President. For the second time, Nader will seek the Green Party nomination. His political debut four years ago was disappointing; He spent only \$5,000 and refused to ask for large contributions. This time he hopes to raise \$2.5mn by August. Nader has no delusions of grandeur. He simply wants to put the environment firmly on the political map. If he can win 5 per cent of the national vote, America's fledgling Green Party will have a permanent place at the Washington roundtable.

Blair Backtracks on BNFL

In July 1989, the UK parliament debated the sell-off of Britain's state-run nuclear power stations. Then secretary of state for energy Cecil Parkinson wanted to privatise the country's more modern reactors.

The then opposition spokesman for energy raised a stink: 'The Honourable Gentleman would sacrifice anything, including normal commercial prudence, the interests of the taxpayer and the consumer, and the future energy needs of this country, provided that, above all else, he can sell his privatisation to the City,' he ranted.

Parkinson called it 'a fine display of rhetoric,' and with hindsight he was absolutely right. For the speaker was none other than the honourable Member for Sedgefield, Tony Blair MP, whose government is now pushing British Nuclear Fuels towards fast-track privatisation.

A POT-POURRI OF COMMENT ON ECOLOGICAL ISSUES
from THE WORLD'S PRESS

THE BATTLE BOX

The world media on GM foods.

Three cheers for British Channel 4's recent exposé on GM food, says A A Gill in **The Sunday Times**. For it sets out 'what most of us in the food business already know;' namely, that 'everything you think you know about GM is wrong; not just wrong but vauntingly selfish, criminally neglectful and ultimately murderous.' Because, the fact is that biotechnology 'could be an enormous boon' to the developing world, and the 'Luddites' who stand in its way are simply encouraging starvation.

Rubbish, says Dr Sue Mayer in **The Guardian**. Food scarcity is as much to do with 'political and social attitudes' as it is to do with farming. It's not that there isn't enough food in the world, it's just that it's not being fairly distributed. And, if anything, genetic modification will make the situation worse. Biotech supporters trumpet inventions like their 'super rice', which produces 35 per cent higher yields than traditional rice, as an end to hunger. But they ignore the devastation that their development of GM plants for the North, to substitute crops like palm oil and cocoa which are traditionally grown in the South, will cause to developing world economies.

Quite, say Sally Fallon and Mary Enig in **Wise Traditions**. Besides, what the developing world really needs is a balanced diet, with meat, seafood, eggs and dairy: 'In other words, the kind of foods available in a prosperous peasant economy'. Super rice, or not,

'the monocultured fields of the global plantation' won't stave off world hunger.

Well, since we're on the subject, says James Freeman in **USA Today**, here in America we've been eating up our biotech greens for nearly a decade and it's not doing us any harm. In fact, 'the news is all good; lower prices and more abundant food.' Of course, there has been the odd scare story. Recently, the EPA suggested that a GM maize crop that secretes a biological pesticide could kill monarch butterflies. Well, although that's 'not exactly the end of the world,' it does 'sound bad'.

The problem is, people are getting confused between genetic engineering and selective breeding. But, in actual fact, it's all one and the same thing. Breeding just 'isn't a scary word, so people who oppose technology call it "genetic modification"'. Oh ye of little faith!

No, no, you've got it all wrong, say Amory B Lovins and L Hunter Lovins in **Wired**. How many times does it need to be explained? Genetic engineering is nothing short of revolutionary. Because, for the first time in the planet's history, DNA – the blueprint of life – is being allowed to self-replicate in a foreign genetic environment. The consequences are unknown. Let's not forget that. There are better, safer solutions to world hunger than GM crops.

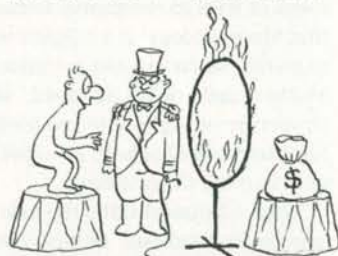
STAN AT EASE
by Stan Eales

THE VANISHING WORLD

VANISHING RAINFORESTS...



VANISHING INNOCENCE...



VANISHING CLEAN WATER...



VANISHING EMPATHY...



VANISHING GREEN SPACES...



VANISHING FEET



EE

TITLE: BROCKMAN ART LIBRARY

PROTESTORS PLAY THE MEDIA PIPE

Kalle Lasn *Adbusters Magazine*

Protest is PR, a way of getting the message out. Every protestor knows that. But in the 'Battle of Seattle' last November, the message took a stand of its own, says Kalle Lasn. For the first time, activists not only took to the streets, they also infiltrated the hallowed grounds of commercial advertising. The 'media pincer' began weeks before the protest, when messages were broadcast across college campus radio stations. Billboards were the next target, with posters appearing across Seattle. The final crunch came on 30 November, for when Americans tuned into CNN to find out

what was going on in Seattle, they were greeted by a 'TV mindbomb'. Under images of global ecological devastation and frenzied market trading, a voice said: 'Overproduction. Overconsumption. An unregulated global casino. A world awash in chemicals. Let's go to Seattle and put those issues on the WTO agenda.' The message lasted just 60 seconds. But it points the way towards a 'potent new brand of social activism,' because, from now on, protestors won't just be seen, they'll be heard as well. And from the podium of consumer culture itself; the mass media.

TERRIFYING TECHNOLOGY

Bill Joy *Wired*

Put the technology genie back in the bottle, says Bill Joy. As co-founder and chief programmer of the world's second largest software company, Sun Microsystems, 'I am no Luddite,' he says. My life has been spent at the forefront of the computer software revolution, where I hoped my work might make the world 'a safer and better place.' But nowadays I'm not so sure. Because, to my mind, the technologies that we are on the cusp of perfecting today are too dangerous to unleash. Take robots. By 2030 computerised robots will be so powerful that their mechanisms will easily outpace the human brain. 'And once an intelligent robot exists, it is only a small step to a robot species.' Biotechnology is

just as bad. For the first time, genetic engineering allows man to create life – to play God. But, in the wrong hands, genetic engineering could easily be used to exact a 'white plague'; a strain of deadly virus that targets specific genetic types. Nanotechnology - the use of microscopic 'assemblers' that will create molecular matter from nothing – poses the same threat. One slip up and the nanobots could coat the world in 'grey goo'; a synthetic slime that would 'reduce the biosphere to dust in a matter of days'. The problem with these new technologies is their capacity to self-replicate. 'Given their incredible power,' isn't it time we did 'the right thing,' and stopped using them altogether?

AGENT ORANGE STILL POISONING VIETNAM

Robert Dreyfuss *motherJONES*

Twenty five years after the end of the Vietnamese war, the effects of the US military's most deadly chemical weapon are still being felt in Vietnam today, says Robert Dreyfuss. Between 1962 and 1970, America doused the jungle-bound war zone with 11.2 million gallons of the toxic defoliant, Agent Orange. As much as half of the country's mangrove forests were destroyed and rivers, fish, soil and animals were washed in poison. It wasn't long before US war veterans began experiencing the ill effects; tumours, neuro-muscular disorders, severe

diarrhoea and birth defects. Later, manufacturers Dow Chemical and Monsanto paid over \$180mn in compensation. But Vietnamese veterans weren't so lucky. The government gives them just \$7 a month compensation and today, according to the Red Cross, over 5 per cent of their children are born with birth defects. Recent studies show that the country is still massively contaminated. Yet all Vietnam's attempts to claim compensation from the US have fallen on deaf ears. It's time America took responsibility for the pollution in Vietnam.

FACTS & QUOTES

Chinese trade representative, Shi Guangsheng on Seattle: 'It was chaotic... We have democracy and freedom in China, but we certainly would not allow one group exercising it to prevent another group from doing so. International business ministers from all over the world lost their freedom.'

National Mining Association President and CEO Richard L Lawson on developing the economies of Third World countries: 'The answer for us is to teach them how to bring poverty under control. And it all begins with digging a product out of the ground.'

Dan Glickman, Secretary of US Department of Agriculture, on America's new National Organic Standards: 'Let me be clear on a very important point. The organic classification is not a judgement about the quality or safety of any product... Just because something is labelled as organic does not mean it is superior, safer or more healthy than conventional food.'

Lester Brown, founder of Washington green group, the Worldwatch Institute, on the group's 17th *State of the World* report: 'We hoped that we could begin the next century with an upbeat report,' he said. Unfortunately, however, 'as the Dow Jones goes up, the Earth's health goes down.'

'Members of the globophobia alliance...speak of the protection of workers' rights in developing countries... [They] press for the global adoption of homogenous core labour standards... But trade mostly occurs now precisely because countries have different conditions, including labour ones. For the foreseeable future, banning countries' differences will be equivalent to banning international trade – and just as absurd.' Mexico's confused President Ernest Zedillo

America's military budget is seven times the total military budgets of all of the countries which the US considers potential enemies.

A report by Greenpeace reveals that the Irish sea bed has been so seriously contaminated by British nuclear plant Sellafield that it should be classified as nuclear waste.

It takes 100 gallons of water to make one cotton T-shirt.



US: Colorado's White River National Plan is under attack

On 9 May, Colorado's White River National Forest will revise its management plan that 'zones' sections of forest for logging, preservation and recreational purposes. The plan will guide forest management for the next 10-15 years. Of the various alternatives at hand, the Forest Service chose one that modestly tackles threats posed by motorised recreation, but fails to adequately protect wildlife and wildlands. It is known as Alternative 'D'.

Yet State Governor Owens is hard at work to halt even this modest scheme. He has sided with the various groups that are pressurising the Forest Service to allow ever more ski area expansion, more roads, more logging, and expanded motorised access.

Colorado Wild needs your support by

9 May, to push the Forest Service to select the 'Conservation Alternative'. Also known as Alternative 'I', this is the best plan for protecting wildlife habitat, recommending additional wilderness, preventing logging in roadless areas and restricting developed skiing.

What you can do: Download the essential details from www.coloradowild.org Write letters to Governor Owen, Representative McInnis and Senator Campbell and the Forest Service. (All contacts can be found on the Colorado Wild website.) For more information, contact Colorado Wild, PO Box 1525, Boulder, CO 80306. Tel: + 1 303/ 546 9911 or email: jeff@coloradowild.org

CANADA/AUSTRALIA: Fighting the climate giants

Greenpeace Canada has launched a campaign against Suncor Energy Inc, one of the country's largest contributors to greenhouse gas emissions. The company produces oil from what are known as tar sands. Greenpeace's action was prompted by the oil giant's new Project Millennium in Fort McMurray. The area has vast oil reserves, estimated at more than one trillion barrels of bitumen. Its tar sands may contain as much as one-third of the known global petroleum reserves – and Suncor is gearing up to exploit them.

According to Suncor's own 1999 progress report for Canada's Climate Change Voluntary Challenge and Registry Program,

its greenhouse gas emissions will almost double by 2002.

Greenpeace Australia has jointly launched a campaign against Suncor's Stuart Oil Shale Project in Queensland, Australia.

Shale oil is a fossil fuel, extracted from shale rocks through heat. Its production creates more greenhouse emissions than any other energy source. Production and use of shale oil emits up to 60 per cent more CO₂ than conventional oil.

The development of Shale oil in Australia is supported by the country's government, and by various financial institutions such as AMP, Westpac, ANZ and the Commonwealth Bank.

What you can do: Download all the evidence from www.suncore.org and get active by joining the Greenpeace campaign. Should you live in either of the two countries directly affected, use your voice to pressurise the various institutions involved.

IRAQ: Stop the Iraqi sanctions

Earlier this year, Hans von Sponeck, the UN assistant secretary and humanitarian coordinator in Iraq, resigned after strongly condemning the ongoing UN economic sanctions for unjustly punishing the innocent civilians of Iraq. Jutta Burckhardt, head of the UN World Food Programme in Baghdad, has also resigned in protest.

It is clear to almost everyone now that UN sanctions on Iraq are merely strengthening Saddam Hussein's cruel regime, while failing to address the true causes of the humanitarian crisis. For example, annual death rates among children dying from respiratory infections and malnutrition – exacerbated by lack of imported medicines – increased from 166 in 1989 to a highly disturbing 5,309 in November 1999.

Voices against these punitive measures have increased dramatically with many of them stating that the very intention of economic sanctions is only to enrich the countries who impose them on so-called 'democratic grounds'.

In late February, 70 members of the US Congress signed a letter urging President Clinton 'to do what is right: lift the sanctions'. Within the same week, 36 Nobel Peace Prize laureates, including Nelson Mandela, Aung San Suu Kyi, Mikhail Gorbachev and the Dalai Lama, appealed for an end to the sanctions.

In their call they also urged all citizens of the world to do everything in their power to help them in their appeal.

What you can do: Start a petition in your organisation or neighbourhood calling for an end to inhumane sanctions against Iraq. Submit the resolution to the US or UK representative in your country, and send a copy to the editors of your newspaper, urging them to cover this tragedy.

World-Wise Web: The five best Internet campaigns this month

Join *Global Exchange's* 'Roast Starbucks' campaign. Send an on-line fax to Howard Schultz, Starbucks CEO, asking him to sell Fair Trade Coffee to guarantee social justice for farmers and ecological production methods. www.globalexchange.org

A resolution directing the US to withdraw from the WTO goes to the House of Representatives any time between now and 24 May 2000. Join the 'electronic march on Washington' to support it. www.StopWTO.org

An international oil consortium plans a multi-million-dollar oil project in Chad and Cameroon. The World Bank is considering finance. Sign Rainforest Action Network's letter to the Bank's head, urging him to keep clear. www.ran.org

Sign an International Rivers Network online petition for Wall Street banks to stop financing China's destructive Three Gorges Dam. www.floodwallstreet.org

Download a taxi door sticker urging passengers to watch for cyclists when getting out of taxis – then find your taxi... www.citystreets.org

FRANCE: Farmers versus fridges

Up to half of the small stallholders at more than 3,000 local French markets will disappear if they do not comply with European Council Directive 93/43/EEC of 14 June 1993 on the hygiene of foodstuffs by 15 May 2000. As so often, local producers have no choice in the matter.

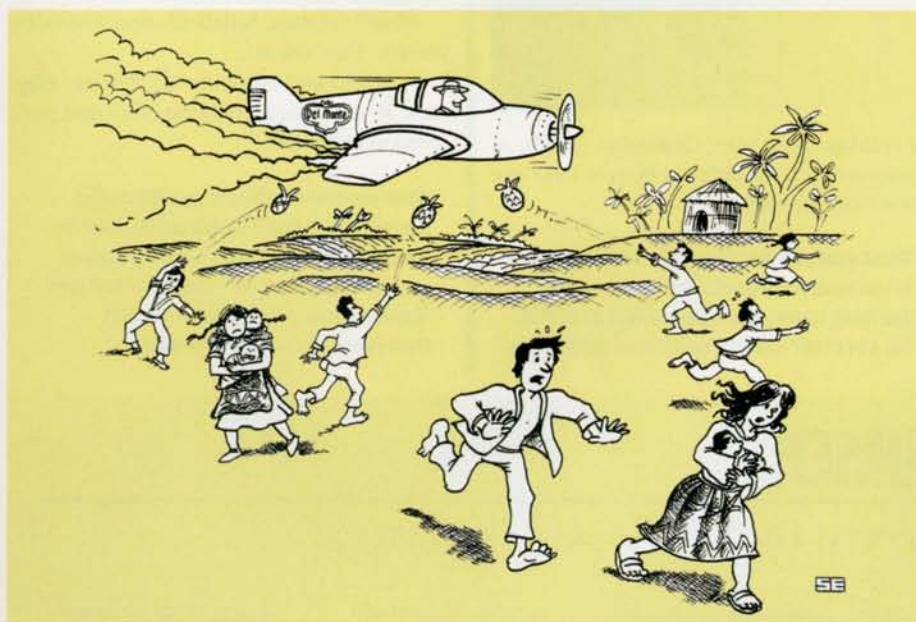
From 15 May onwards, each fishmonger, farmer, butcher, cheese-maker, etc will have to follow tough and costly hygiene regulations regarding the transport and display of their products. All products will have to be displayed behind glass and at precise temperatures. Products on shelves will have to be 'protected'. Each stall will have to follow a

veritable ritual of disinfection; including the stallholder. It will have to be equipped with water filters, basins to wash hands, separate basins to rinse produce and electric sockets with specific safety measures. The laws on the transportation of produce regulate the trailer, the temperature, where, when and how to store and how to dispose.

Many stallholders, who cannot afford these innovations, are thinking of packing up. But they will not leave without telling politicians to take the directive... elsewhere.

What you can do: Join the stallholders' protest. Provisional dates for action have been set between 1-3 May 2000.

Contact Nelly Peugeot at Nature et Progrès, email: nature.et.progres@wanadoo.fr or fax + 33 466032341



STAN BALES

KENYA: Man from Del Monte, we say 'No!'

Close to the town of Thika, in Kenya – the country with the biggest food sector in East Africa – Del Monte Royal, food multinational Del Monte's African sister, operates a 5,000ha plantation where 300,000 tonnes of pineapple are harvested each year. The Kenyan Human Rights Commission has condemned Del Monte's working conditions, showing that workers' wages have been cut below basic needs; living and sanitary conditions built for the workers are dangerous; unions have been intimidated and toxic pesticides are being used without proper training and protective equipment.

Del Monte Royal refutes these claims. But

according to *Pesticides News*, all the Kenyan Human Rights Commission's findings were confirmed by an independent certification company. Workers say the price of consumerism and investment is not worth paying.

What you can do: Join the 'Let's say no to the Del Monte man' campaign, monitored by the Italian human rights group Centre for a New Development (coord@cmns.it). Or write with your objections to Del Monte Royal's CEO, Vivian S Imerman, Del Monte Royal Ltd, S Brine Avenue, Chloorkop, Kemption Park, 1619, South Africa.

CAMPAIGN DIARY

1-7 May 2000 **PeaCentury 2000 A Peoples' Human Rights Conference** Edmonton, Alberta, Canada.

Hosted by the International Society for Peace and Human Rights, this meeting will discuss human rights and environmental issues.

Visit www.ualbera.ca/~hudema/

4-5 May 2000 **First Conference on Carbon Finance** London, UK.

Supported by the International Emissions Trading Association, speakers include representatives from BP, Amoco, Enron, Aon Carbon, the World Bank and the DTER. A repeat of this meeting will be held in New York on 16-17 May. Registration: £845 + VAT. For further information, call +44 20 72519151 or email info@environmental-finance.com

15 May 2000 **Coral Reefs of the Bahamas – Exotic but Endangered Ecosystems**

National Museum of American History, Washington DC, US.

Thomas McGrath of Earthwatch will describe the causes of fatal bleaching of coral reefs. Tickets: \$14/ \$11.

For further information, call + 1 202 357 3030 or visit www.audubonnaturalist.org

16-20 May 2000 **SOS (Save Our Sleep).**

Friends of the Earth, Europe & the Aviation Environment Federation have organised a four-day protest against night flights. Contact Aviation Environment Federation, 5 High Timber Street, London EC4V 3NS. Tel: + 44 171 329 8159 email: aefed@compuserve.com

19-21 May 2000 **Animal & World Show** Novotel Exhibition Centre, London, UK.

'Europe's largest environmental awareness event'. For more information, contact Animal & World Show on +44 020 8846 9714 or visit their website www.animalworldshow.org.uk

23 May 2000 **31-day Land Occupation against GMs.** Call +44 160 376 8235.

World-Wise Web: The five best bookmarks

www.ethicalconsumer.org

The world's best site on ethical consumption with a veritable treasure of 'links'.

www.members.tripod.com

/~ngin/ Norfolk Genetic Information Network's remarkable web-site.

www.iwpr.ac.psiweb.com

The Institute for War and Peace Reporting, offering more than the main media.

www.wri.org

An essential address for environmental 'number-crunchers'.

www.mcspotlight.org

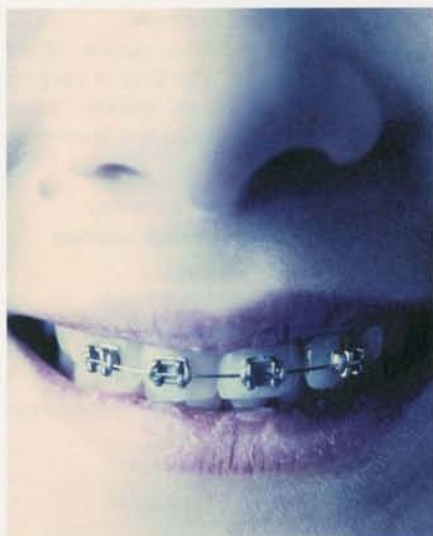
Anti-McDonald's site, with the *Local Residents against McDonald's* campaign.

UK: The tooth fairy comes to Britain

The US Radiation & Public Health Project (RPHP) has invited Britain's Low Level Radiation Campaign (LLRC) to take part in a new study of radioactivity in children's teeth. Parents who collect their young children's teeth as they grow out are being urged to send them to the LLRC, who will send them on to the RPHP to be analysed for strontium and plutonium levels.

Radiation levels in children's teeth have been increasing over the decades, and are worrying evidence of increasing radiation in the atmosphere. The RPHP study may have profound implications for the future of nuclear emissions policies if it can show dangerous levels of radioactive material in children's teeth.

A similar study of some 6,000 German baby teeth collected since 1992 by the German Section of the International Physicians for the Prevention of Nuclear War found a tenfold increase of the strontium-90 level in the teeth



of children born after Chernobyl (1986), as compared with the children born in 1983 (see www.radiation.org).

What you can do: Send your children's teeth to Low Level Radiation Campaign, Ammondale, Spa Road, Llandrindod Wells, Powys LD1 5EY UK. Tel: +44 01597 824 771, email: bramhall@llrc.org

UK: Turn it off!

With its most important customers packing up and leaving in droves, what is Tony Blair going to do about the scandal-ridden BNFL? Not even Schroder, wants to send fuel to Sellafield any more. And despite the skills of the BNFL ambassador, Japan insists on taking back their consignments, and Switzerland is halting shipments to the plant.

Although Tony may have already found another scapegoat to pay for his 'New Vision', one is left to wonder how many 'accidents' will remain undiscovered.

What is certain, Sellafield should have no place in this 'vision'.

Sellafield and BNFL are on the very edge now, so give them a helping hand and push them over the cliff.

What you can do: Write to your MP asking him/her to sign EDM Nos.323 or 539. Send an email to Tony Blair at www.number-10.gov.uk, asking him to 'turn it off'— click 'Your Say' then 'Speakers Corner' & 'Environment'. Join Greenpeace's Anti-nuclear campaign.

CONSCIOUS CONSUMER

A SPECIAL FOCUS THIS MONTH ON NEW WASTE INITIATIVES.

◆ **Raise a glass** to Asahi Breweries of Japan, whose Ibaraki plant north of Tokyo has reached its amazing target of recycling not some, not most, but all of its production waste. From surplus brewers' yeast made into cosmetics, and plastic containers turned into road paving chips, the beer-maker has found a good use for everything. ◆ **The introduction** of digital television will bring about an

unwelcome side-effect in the redundancy of millions of analog sets – unless someone takes the initiative. Technology Recycling of Denver, US, already provides a recycling service around the world for old computer hardware. It's now time for someone to come forward to recycle our old television sets. ◆ **It's not just** about recycling paper, it's about buying it back again, believes BioRegional, an

environmental organisation running a sustainable office initiative, 'Local Paper for London'. Find out more on localpaper@bioregional.com ◆ **Meanwhile, The Ecologist's** award for most imaginative use of waste paper goes to Japan's pavilion at Expo 2000, held in Hanover from 1-31 June. The entire 3,512 square metre building is made out of recycled newspaper. And once Expo 2000 is over,

the entire pavilion will return to its former role as recycled paper. ◆ **Although cars are** still a necessary evil for many people, products like Ecoflow can help reduce the impact of vehicles on the environment. Ecoflow is a tiny gadget that you strap to a vehicle's incoming fuel line. Through magnetic ionisation, Ecoflow cuts cars' fuel emissions and consumption. In a study carried out by the British

Department of Trade and Industry a Vauxhall Cavalier fitted with an Ecoflow used 11.5 per cent less fuel and produced 15 per cent less carbon monoxide emission. Carbon dioxide emissions were cut back 11 per cent while hydrocarbon fumes fell 24 per cent. Fitting an Ecoflow is easy, it costs less than £50 and its properties are guaranteed for life. Telephone Alex Hill on +44 (0) 1725 513 302.

CIWF COMPASSION IN WORLD FARMING



...is the UK's leading farm animal welfare organisation.

Last year, CIWF helped to achieve two major farm animal victories. On Jan 1 it became illegal in the UK for pregnant sows to be chained to the floor or kept in narrow stalls. On June 15 the EU Ministers voted to ban the battery cage.

In the new millennium, CIWF continues to campaign on many issues:



- Millions of animals, donkeys, horses, lambs, cows and pigs are transported across long distances often without food, rest or water
- Sows are kept in tethers and stalls in many countries across the EU
- Dairy cows are milked to capacity, often suffering from lameness and mastitis
- Broiler chickens are kept in cramped windowless sheds, forced to grow at twice their natural rate
- Animals are genetically engineered to alter their genetic make-up to make them grow faster, bigger or leaner

By joining CIWF you could help us to win an end to these cruel factory farming systems. To become a supporter costs just £21 a year or £1.75 a month. To become a life supporter costs £1000. Students, the unemployed and senior citizens can join for just £10 a year.

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Q WHO CARES ABOUT GLOBAL TRADE?



FIELD FOR THE BRITISH ISLES BY ANTHONY GORMLEY PHOTO COURTESY OF THE ARTIST.

Global free trade is one of the biggest issues of today. But what do people really think about it and its effects? Does anybody care? To find out, we commissioned an exclusive MORI poll on the subject. The results were startling.

Public opinion is a powerful thing. Ask any politician. When an electorate speaks strongly with one voice, governments listen. Failure to do so can imperil their own survival.

With this in mind, *The Ecologist* put together a series of questions designed to test the public mood on the fundamentals of the global trading system. As the pace of economic globalisation heats up, this is something that affects everyone – but the voice of the majority has rarely expressed itself on the subject.

But virtually no one, including most politicians, either have the time or know-how to decipher the complex global trading agreements. It was well established in the run up to the congressional vote on the North American Free Trade Agreement (NAFTA), and in the British debate on the Maastricht Treaty that few if any politicians had familiarised themselves with the actual documents. And so it is with the World Trade Organisation (WTO) whose rulings will fundamentally affect our lives – from the way we do business to the very air we breathe – that we are being pushed to accept an agenda about which we have been told virtually nothing.

For this reason, we avoided asking questions directly about global trade agreements, economic theory or models, and focused instead

on people's priorities and some of the effects of the process. The results were astonishing. While it has always been clear that the vast majority of our leaders are utterly wedded to globalisation as prescribed by the WTO, it is now clear, for the first time that the British people are equally vehemently opposed to that process.

Politicians and the transnational corporations who are the greatest beneficiaries of the process constantly tell us that globalisation is inevitable, even evolutionary, and unstoppable. President Clinton, for instance, once proclaimed that 'globalisation is not a policy choice, it is a fact'. Tony Blair declared 'Globalisation is irreversible and irresistible'.

But this is quite simply not true. Just as these agreements were negotiated, so can they be renegotiated. The current global trading system, policed by the WTO, has been deliberately planned, largely in secret, by the world's most powerful countries and commercial interests. Described by Renato Ruggiero, former Director General of the WTO as 'the constitution of a single global economy' the rules faithfully reflect the input of these commercial interests. But with enough opposition, these trade rules can be made to reflect the interests of people generally.

The following report, prepared on our behalf by MORI reveals the stark dichotomy between the outlook of the people, and that of their representatives. And more importantly, it throws into question the workings of Britain's 'New Democracy'. ■

A YOU DO

We commissioned the long-established UK opinion research company MORI to carry out the following poll. MORI interviewed a nationally representative sample of 982 British adults, aged 15+, between 17 and 21 February 2000. Data was weighted to reflect national population profile.

QUESTION ONE:

Thinking about trade between different countries, to what extent do you support or oppose national governments being able to protect the interests of companies in their countries, (for example by offering tax advantages or setting up import barriers) against those of multinational companies?

	All	M	F	15-24	25-34	35-44	45-54	55+
Support	55%	56%	54%	54%	45%	60%	66%	54%
Oppose	12%	19%	6%	7%	13%	12%	14%	14%
Neither/don't know/no opinion	33%	25%	40%	39%	42%	28%	20%	32%



QUESTION TWO:

The government has laws and regulations in place to protect a number of different areas of society such as the environment, employment conditions and human health. If a conflict develops between the interests of multinational companies and these areas, what do you think, in principle, the government should do? Should it protect or not protect the following against the interests of multinational companies (that is, companies that operate widely in a number of countries):

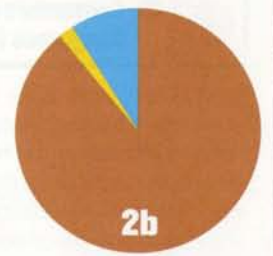
a The environment

	All	M	F	15-24	25-34	35-44	45-54	55+
Protect	90%	93%	88%	89%	88%	94%	97%	87%
Not protect	1%	1%	1%	-	*	2%	1%	1%
Depends/don't know	9%	6%	11%	11%	12%	4%	2%	12%



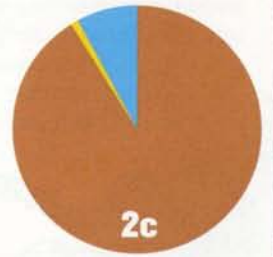
b Employment conditions

	All	M	F	15-24	25-34	35-44	45-54	55+
Protect	89%	90%	87%	90%	88%	91%	97%	83%
Not protect	2%	2%	1%	1%	2%	2%	1%	3%
Depends/don't know	9%	8%	12%	9%	10%	7%	2%	14%



c Human health

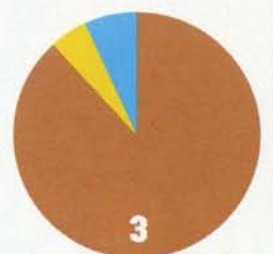
	All	M	F	15-24	25-34	35-44	45-54	55+
Protect	92%	93%	90%	90%	91%	95%	98%	87%
Not protect	1%	1%	1%	1%	0%	1%	0%	2%
Depends/don't know	7%	6%	9%	9%	9%	4%	2%	11%



QUESTION THREE:

To what extent do you agree or disagree that governments should be allowed to restrict the import of goods which they believe may be damaging to the health of the population?

	All	M	F	15-24	25-34	35-44	45-54	55+
Agree	89%	90%	87%	81%	90%	90%	95%	88%
Disagree	5%	6%	3%	5%	7%	4%	3%	4%
Neither/don't know/no opinion	6%	4%	10%	14%	3%	6%	2%	8%



The Ecologist analysis



1. Local Businesses or Multinational Corporations?

The actions and principles of the World Trade Organisation are deliberately designed to outlaw WTO member states from protecting their own companies or products against foreign competitors. One expert on global trade calls this principle 'the very pillar of the multilateral trading system'. Article 3 of GATT (a key WTO agreement), known as 'National Treatment', requires member states to treat goods from foreign producers as they would treat domestically-produced goods. WTO member states are thus unable to protect their national economies against foreign competition. It seems that only 12 per cent of people in Britain, though, accept this fundamental tenet of the global trading system.



2. Multinational Corporations or Human Health, the Environment and Labour Standards?

This result is a remarkable condemnation of another fundamental principle of the WTO – that trade comes before all else. The WTO has been severely criticised, even by some of its supporters, for this principle, but it has steadfastly refused to budge. Indeed, WTO rules have been used as a battering ram to attack environmental and conservation measures across the world. WTO dispute panels have declared environmental protection laws, such as the US Clean Air Act and the US Endangered Species Act, to be 'barriers to trade', and several WTO articles allow national health and worker protection measures to be treated in the same way.



3. Consumers or Compulsory Exposure to Potentially Dangerous Products?

International trade rules have recently prevented governments from restricting imports of unpopular and potentially damaging goods such as genetically-modified food and hormone-treated beef. The WTO's SPS Agreement rules that it is illegal to restrict imports unless any dangers they may pose can be scientifically proven within a limited period of time. In other words it is the consumer who must 'prove' the dangers of any new product rather than the producer of that product. In the case of new and potentially dangerous technologies and products like genetic engineering or artificial hormones, most independent commentators believe that the 'precautionary principle' should be applied, whereby a product is considered to be 'guilty until proven innocent'. In the light of numerous disasters with novel medicines and technologies in the latter part of the last century, it is only in this way that consumers can rest assured that their health and the health of their children is adequately protected. Again the stunning results of this question show just how far apart are the goals of the WTO and the wishes of the British people.



THE GREAT DIVIDE

Editorial Comment

By its very nature, economic globalisation affects every area of our lives. The increasingly global nature of trade and capital flows sounds a dry, economic or financial issue, but it is one that is worth paying attention to, for it has profound implications for the future, and is already having profound effects on patterns of existence all across the planet. The change in global economics that we are undergoing today could be the single biggest upheaval since the industrial revolution.

GLOBALISATION

Globalisation is hardly a new process. Trade between nations has been with us for millennia. Trans-national political cooperation, not to mention competition, has been with us for centuries, global institutions for the best part of a hundred years. The idea of spreading cultural values and economic systems, by political, military or economic force, and of imposing what works for the wealthy minority on everyone else, too, has been with us since the dawn of time.

But today's globalisation is faster, more frenetic and infinitely more damaging than ever before. Modern communications, global institutions and corporations, the computer chip, the internet, the telephone network, sophisticated transport and all the rest is enabling change that would previously have taken decades or even centuries to happen in the space of years, months, even days. Modern globalisation is changing the world – the whole world, rich and poor, north and south, enfranchised and powerless – strikingly fast.

Its purpose, in theory, is to remove the 'barriers' currently inhibiting trade, international economic competition and specialisation, and thus to enable economic growth – that great panacea – to bring its benefits to everyone, raising standards of living across the planet. That, at least, is the theory. The reality is somewhat different. Many of the effects of this process have been negative, making things worse for the environment, for poor countries, for the disenfranchised, for small communities, for people who, for one reason or another, are outside the economic loop. The real beneficiaries of globalisation, in fact, are the transnational corporations who have drawn up many of its rules, and played a key role in pushing the process forward.

CORPORATE DOMINANCE

These institutions have come, more than any other, to define and dominate our times – and often for the worse. Their responsibilities towards civil society, localities, communities or individuals are negligible. Their operations are governed by the profit motive, global competition, the braying of large shareholders and the global financial casino. They are largely unaccountable to the people whose lives they affect, and deaf to non-economic issues. Yet their power, increasingly, is awesome.

Today, it is transnational corporations, not armies or governments, which are the driving force behind the transformation of the planet. In 1970, according to UN statistics, there were 7,000 of these insti-

tutions in existence. Today there are 44,000, and the number shoots up every year. Fifty-one of the world's 100 largest economies today are not nation states but private companies. Tobacco firm Philip Morris, for example, has annual sales greater than the GDPs of 148 countries. Saudi Arabia, a nation rich in oil wealth, is poorer than the top six transnational companies. As much as 70 per cent of world trade is controlled by just 500 corporations.

These corporations represent an enormously powerful lobbying force, able, effectively, to hold governments to ransom in order to get their way. Their lobbyists have access to the highest levels of the most powerful governments, and they have been crucial in presiding over the creation of a global economic infrastructure which advances their interests at the expense of local economies, jobs, ways of life and human and environmental health.

THE WTO

The most obvious current manifestation of this infrastructure is the World Trade Organisation, which began life in 1995. Its job is to police the global trading system, supposedly to ensure that international trade is 'fair' and that the global market remains truly 'free'. In fact, because of the WTO's rules, membership, secretive nature and general world view, its effect in reality is to advance the interests of powerful (usually Western) corporations above anything – ecosystems, human health, social standards, labour laws, etc – that stands in their way. What the WTO represents, in fact, is a remarkable, largely silent coup, carried out by the richest and most powerful institutions in the world, to ensure their continued dominance in the coming century.

Yet who, before the showdown at Seattle last year, had ever heard of the WTO? Even now, do many people know anything about its role, function and purpose? The fact is, that an entire global economic infrastructure, almost a world constitution, has been constructed by the world's most governments and corporations, without any consultation, and without bothering to ask the citizens of this planet whether the path they are taking us down leads to where we want to go.

This is no conspiracy theory – it is happening. And it is not just the voters who are being kept in the dark. Before the North American Free Trade Agreement (NAFTA) was signed, in 1994, a majority of US congress people admitted to not having read the treaty they were signing their country up to. Yet still they signed. Notoriously, one of Britain's most senior politicians, Home Secretary Jack Straw, admitted on live television, during the abortive negotiations on the Multilateral Agreement on Investment, that he had never heard of the agreement, and had no idea what its purpose was. Until Seattle, few journalists knew, or cared, much about global trade rules. Most still don't. There is a remarkable paucity of debate, discussion and critical analysis of global trade issues across the world. This is extremely convenient for the beneficiaries of the current, skewed, global economic system – but extremely dangerous for the rest of us.

IS ANYBODY OUT THERE?

What does this situation say about democracy and debate in the 'free' West? Why is nobody talking about any of this? Why will no politician even dare to raise the taboo questions – is economic growth actually a good thing? How is increased trade beneficial, and who is it supposed to benefit? Why are the poor still poor, while the rich get richer? Is globalisation destroying the environment? Why are journalists not delving into the murky waters of international corporate governance? And why – most importantly of all – are the people, the

voters, the citizens of this planet, not being consulted – or even informed, about some of the most crucial issues of today – issues that will affect the lives of every single person on Earth over the next century?

Perhaps the results of *The Ecologist's* MORI poll provide some sort of answer to this last question. Perhaps the people are not being consulted because the beneficiaries of globalisation know that the people will not give the answers that they want. Certainly our poll indicates that the wishes of the voters of Britain appear to be hugely at odds with the wishes of their policymakers and key global economic powers on trade, the environment and economic accountability.

VOICE OF THE PEOPLE

For it is clear from this poll that the vast majority of people in Britain believe that the interests of multinational companies should come second to those of the environment, human health and employment conditions, wherever there is a conflict. It is clear also that there is widespread support for the concept of government protection for national industries against multinational ones, and for restricting the import of potentially damaging goods.

The significance of this is huge. It implies, as has already been highlighted, that the vast majority of British people oppose the current global trade model, and in particular the principles of the World Trade Organisation. It also means – and this is maybe the most significant finding of all – that the people are in direct opposition to their political representatives on some of the most far-reaching global principles.

Not one of the three main political parties in the UK has raised any serious objections to, or proposed any serious reforms of, the current global trading system. The government abides by WTO rulings which tell it to import hormone-treated beef and to hell with the consequences, and by EU regulations which ban it from giving financial support to national industries or local economies.

And all mainstream politicians trail along in the wake of a system which puts the chimeric priorities of capital and commerce ahead of the very stuff of life itself – the forests, the waters, the soil and the climate of the planet.

POLITICAL FAILURE

When the political class is so out of step with the wishes of the people it supposedly represents, it is time to pull back and start asking questions. It is time for some real, open, public debate on global economic issues. It is time to start seriously questioning the power of corporations, and their role in formulating economic policy. It is time to rethink the political love affair with economic growth and unfettered trade. It is time to examine the Western economic worldview. It is time for some honest discussion about where we are going, who is taking us - and what happens when we get there.

'Globalisation' said Tony Blair, famously, 'is an irresistible and irreversible trend.' If he is even remotely interested in representing the true views of his people on this issue, he had better start seriously looking at how he can resist – yes, and reverse – the priorities and impacts of the current model of globalisation.

That, after all, is what democracy is supposed to be about. ♦

'When the political class is so out of step with the people it supposedly represents, it is time to start asking questions'





IS SCIENCE NEUTRAL?

FOLLOWING OUR ARTICLES IN APRIL'S ISSUE EXAMINING THE INDEPENDENCE OF THE SCIENTIFIC WORLD, WE HERE INVITE DEVELOPMENTAL BIOLOGIST PROFESSOR LEWIS WOLPERT TO DEBATE THE NEUTRALITY OF SCIENCE WITH ENVIRONMENTALIST AND *ECOLOGIST* FOUNDER EDWARD GOLDSMITH.



Edward Goldsmith is an environmental campaigner and author of many revolutionary books and articles on ecological subjects. His *Blueprint for Survival*, first published in 1972, influenced the formation of various green parties all over the world.

Dear Professor Wolpert,

One thing that modern science is not and cannot be is neutral – or, for it comes to the same thing, objective.

To begin with, scientific knowledge is empirical – founded on observation or perception. But perception is subjective. It begins with the detection of data, which is an active rather than a passive process, data being detected, rather as a mine is detected and not just passively received. It is then interpreted in the light of one's mental model of our relationship with the world around us. A perception is thus no more than a hypothesis based on a 'paradigm' developed during the course of our upbringing within our cultural group, whose values and beliefs it will reflect.

That the human mind is simply not designed to entertain objective knowledge is acknowledged by enlightened philosophers of science. Michael Polanyi, for instance, considered that only someone brought up in total isolation from human society could entertain such knowledge, and Karl Popper described objective knowledge as 'knowledge without a knower,' though he thought it possible to build objective 'logical constructs'.

It is further argued by those who see science as objective that a scientific proposition is one that has been 'verified' or 'falsified' empirically. However, as Thomas Kuhn pointed out in *The Structure of Scientific Revolutions*, modern scientists are generally more concerned with 'problem solving' than they are with fundamental issues. And because today's scientists believe unquestioningly in the same overall paradigm, it is only the details that are tested, while the paradigm, and hence the scientists' fundamental beliefs, are never tested 'and could be guaranteed to emerge unscathed' even if they were.

Michael Polanyi considered that 'the test of proof or disproof is... irrelevant to the acceptance or rejection of fundamental beliefs'. To the modern scientist, for example, the belief that man is a rational, as opposed to rationalising, being, that evolution proceeds by natural selection from random variations, and that all benefits are the product of science, technology and industry, is fundamental. It would be difficult to imagine a test that could persuade them

otherwise. Hence Max Planck's oft-repeated saying that 'a new scientific truth does not triumph by convincing its opponents, and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.'

It is reasonable to trace the origins of modern science to Francis Bacon (which is not to play down the roles played by Galileo and Descartes). He was the first to insist that science be methodically separated from values so as to make it truly 'neutral'. In reality he did nothing of the sort. His 'scientific knowledge', instead of being value-free, set out explicitly and purposefully to give humanity power over nature. 'Truth and utility are perfectly identical,' he wrote in his *Novum Organum*, and 'that which is most useful in practice is most correct in theory'. In effect he merely replaced the old 'subjective' values of 'good' and 'evil' with the values of 'useful' and 'useless', or more precisely 'of contributing or not contributing to man's domination over or transformation of the natural world'. There were to be no limits to this transformation. His goal was explicitly stated. It was to 'achieve all things achievable'. At least he was honest enough to admit it.

Modern science has followed Bacon's lead to the letter but does not admit it. It serves two purposes. The first is to provide the knowledge that will enable technologists and industrialists to transform the planet. As such it is reductionistic, since a holistic science could not conceivably lead to the development of pesticides, antibiotics, genetically modified crops or atom bombs.

The second is to rationalise, and hence legitimise, such endeavours by accentuating their apparent short-term benefits. Again, a truly holistic science would be undesirable as it would reveal the intolerable biological, social and ecological implications of such endeavours.

Edward Goldsmith

Dear Edward Goldsmith,

Science is the best way of understanding how the world works and has been astonishingly successful in doing so; and I disagree with almost everything that you write in your letter. Contrary to your view,

NO

I claim that reliable scientific knowledge is morally and ethically neutral, and ethics only enter when science is applied to making a product, for example, GM foods. If we are not at the centre of the universe, and genes are responsible for determining some of our behaviour, that is the way the world is - it is neither good nor bad. Knowledge can be used for both good and evil. Of course scientists in their work have the responsibilities of all citizens to do no harm and be honest.

Their additional responsibility is to put their work and its possible applications in the public domain. But one must distinguish between scientific knowledge and its application - technology. It is the very nature of science that it is not possible to predict what will be discovered or how these discoveries could be applied.

The idea that science is not objective and does not tell us how the world works is a philosophical problem that bears no relation to reality. Do you really not believe that we are made of cells or that the heart pumps blood or that DNA is the genetic material? Practising scientists have not the slightest interest in the philosophy of science, and, in the historian Gerald Holton's phrase, view philosophy of science as a 'debilitating befuddlement'. In his book, *Dreams of a Final Theory*, the distinguished physicist Weinberg has a whole chapter entitled 'Against Philosophy'. He describes himself as 'an unregenerate working scientist who finds no help in professional philosophy,' and continues, 'I am not alone in this; I know of no one who has participated actively in the advance of physics in the postwar period whose work has been significantly helped by the philosophers'. This is also true of biology and the tremendous success of genetics and molecular biology.

Philosophers of science have contributed nothing that helps us understand the scientific process. The oft-quoted counter-example is Karl Popper's famous book *The Logic of Scientific Discovery*. Popper claimed to have solved the problem of induction by arguing that science proceeds by a sequence of bold conjectures rather than being based on observations, and that then these conjectures are replaced when they are falsified. Falsification is all and verification irrelevant.

This view completely ignores the nature of discovery in science, and fails to explain how one knows that a falsification is correct. He goes so far as to say, 'Our science is not knowledge; it can never claim to have attained truth, or even a substitute for it, such as probability... We do not know; we can only guess'. What nonsense - DNA is the genetic material and codes for proteins.

The so-called 'fundamental beliefs' of science you claim are largely your invention. I have no knowledge that scientists as a group believe man (no women?) to be rational. Most do believe that evolution works by natural selection on changes in organ-

isms due to random changes in their DNA, and the evidence for this is overwhelming.

I admire Kuhn, but he does not use science as only 'problem solving' in your pejorative sense. Scientists deal with the most fundamental of problems relating to how nature functions. Planck's point about scientists being unwilling to change their minds emphasises that science is a communal process in which the views and contributions of the individual are in the long run irrelevant. One should not give up one's ideas too easily.

It is to Archimedes and Galileo that we should point to the origins of modern science - Bacon discovered nothing, and was all talk. Truth and utility are not the same. I do not understand what 'holistic' science means. It must be true that all phenomena in the universe are controlled by the same set of fundamental physical laws. I cannot believe that you would disagree. But that is not the same as wanting to explain everything in terms of physics.

There are different levels of organisation, long recognised by biologists, and the reductionist approach is to try and account for the phenomena at one level in terms of the properties of the components of the next level down. It is unnecessary to go down to further levels but there must be nothing in one's explanations that contradict laws that hold at lower levels, like, for example, the laws of physics. The trick is to find the right level at which to try and explain the phenomena. No one would attempt to deal with economics in terms of the behaviour of molecules, but that is exactly what has been so brilliantly successful with cell and developmental biology. The language of cells is, as Sydney Brenner once put it, molecules.

There are few cases where scientists as a group have behaved immorally, the main example being the false claims of eugenics. As Robert Oppenheimer made clear in relation to the bomb, the duty of scientists is to understand how the world works; but how this knowledge is used ultimately lies, in a democracy, with the people's elected representatives. Moreover, scientists rarely have power in relation to applications of science; this rests with those with the money - industry and government. The way scientific knowledge is used raises ethical issues for everyone involved, not just scientists.

*Professor Lewis Wolpert,
University College London*

Dear Lewis

Thanks for your interesting letter. For you, science such as that involved in mapping the human genome is neutral, though not the use that is made of it by 'those with the money - industry and government'. But scientists cannot live in a void: they must take into account the realities of the world they live in. And in today's world it could not be more predictable that work on the genome project must lead to such things as the development of GM foods. ▶



Lewis Wolpert is professor of biology as applied to medicine at University College London. His main area of interest is developmental biology. He is the author of *Principles of Development and Malignant Sadness: an anatomy of depression*.

YES

‘Like other members of your cult, you have swallowed the neo-Darwinian thesis hook line and sinker’

Edward Goldsmith

✦ The position you take is very much that of the US gun lobby. While they actively supply an increasingly unstable American population with guns, they deny any responsibility for the use to which they are put.

For you, the philosophy of science is of no value. You appear not to be concerned about scientists working in a void. But the philosophy of science serves above all to relate scientific information to other forms of information such as that contained in a genome, an ecosystem or a society's cultural pattern – which is essential in order to understand what science really is, and hence to make scientists aware of the social, ecological and moral implications of the work they do.

In my book *The Way* I document the moral ideas of leading Darwinians and neo-Darwinians. Though their views of evolution vary considerably, they all share the same fundamental beliefs, for instance that morality consists in building up objective scientific knowledge, that moral ideas have to be chosen rationally, that they have to be flexible and constantly changing, and above all that they must promote individualism rather than social values and ‘progress’. The basic underlying values of these biologists are thus indistinguishable, and I would argue, not by chance, from those of industrial mass society.

I do not accept your contention that there is ‘overwhelming evidence’ for the neo-Darwinian thesis. Such ‘evidence’ consists in noting that adaptation has occurred and then taking such adaptation as constituting evidence of natural selection at work.

On the subject of the Galapagos finches that so impressed Darwin, Michael Ruse writes, ‘we find that all the different species show the effects of selection... peculiar characteristic after peculiar characteristic has some special adaptive function... There are beaks for cactus eating, beaks for insect eating on the wing... One species has even developed the ability to probe with twigs for insects in hollow parts of trees’. In this passage, Ruse’s identification of selection with adaptation is quite explicit. The fact that Ruse is assuming what he set out to prove could not be more evident.

Many critics have noted that natural selection is little more than the biological version of Adam Smith’s ‘invisible hand’ – a fundamental belief of modern economists that serves to rationalise and hence legitimise today’s social and economic priorities. As for the ‘random changes’ that you also believe in, what evidence is there that they are really random? How do you know that they are not part of an orderly pattern that you have not been able to identify? It was Lamarck who said, ‘the word randomness only expresses our ignorance of causes’.

Edward Goldsmith

Dear Edward,

There was nothing inevitable about genetics leading to GM foods until the techniques were developed in

genetic research. And what is wrong with GM foods? In all the hysteria I have yet to read a single reasoned argument about the supposed dangers as compared to foods developed during the green revolution. Did you know that those foods were developed by irradiating plants with X-rays and then selecting the mutants for the desired properties? Are you happy with that approach? And do we not need new plants to feed the world’s increasing population? Greenpeace and those like them are almost religious fundamentalists with no interest in evidence or science. Scientists who developed the genetic techniques for manipulating genes are not responsible for GM foods – that rests with the large and rich industrial companies. The techniques were developed in relation to pure research and cannot be compared to guns. It is worth noting that there are very few objects in the world that cannot be put to evil use – I could do terrible damage to you with my glasses. Please do not confuse knowledge with its application.

In a democracy we must all, through our government, take the responsibility for controlling any abuses and dangers. I fail to see why you should want to give so much power to scientists by allowing them to make ethical decisions about the applications of their work. They have neither the right nor the skills.

I cannot accept that the moral values of scientists have a significant influence on their scientific ideas. Scientists deal with the real world and if history were to be rerun, given enough scientists they will come up with the same ideas. DNA will still be the genetic material and water H₂O, though both may be given different names. It is relativistic nonsense propagated by the sociologists of science that science is a social construction with particular validity, just another set of myths. If you really believe that then why bother about applications of science?

I have no strong views on how we should base our moral values but I am sure our evolutionary history plays a role. I am surprised at your rejection of Darwinism and your example is not persuasive; is not Ruse a philosopher? For evolution you should go to Maynard Smith, Bill Hamilton and Dawkins. I am a developmental biologist. Embryos are the key component in the evolution of animals and plants. The only thing that changes from generation to generation is the DNA inherited by the fertilised egg and this controls how the embryo develops. Changes in the DNA lead to changes in adult form and function and this is the material of natural selection acts – the fittest survive.

Surely you are not a Lamarckian – or do you have a hidden religious objection to Darwinism? Randomness is common in nature, the molecules in a gas move randomly as do those in a diffusing chemical in a liquid. It may well be true that certain changes in DNA are more likely than others – I am not an expert on that – but the fundamental principle is the same. Drug resistance is a lovely example

of bacterial evolution. It is also true that development puts a constraint on what can evolve – we could not by natural selection evolve wings like an angel, for example, but we could evolve an angelic disposition; this is due to the number of small changes in DNA required that could lead to forms and behaviours that could be selected for.

Lewis Wolpert

Dear Lewis

I too disagree with just about everything you say. Let's face it our debate is above all a head-on conflict between two opposed and unreconcilable world views.

For a start you regard the opposition to GM foods as public 'hysteria'. Sir Robert May, our Government's chief scientist refers to Doctor Puszta's important work on the effects of GM potatoes on rats as 'garbage'. Doctor William Bean insisted in the *Archive of Internal Medicine* in 1962 that Rachel Carson's exposure of the intolerable effects of DDT was 'so much hogwash'. Professor Lord Zuckerman, who in the early 1970s was also the British government's chief scientist, referred to the Club of Rome's *Limits To Growth* as 'arbitrary speculation', and 'unscientific nonsense'.

My first reaction to these outbursts is that they don't say much for 'scientific neutrality' or 'objectivity'. They suggest instead that scientists like May, Bean, Zuckerman and yourself are little more than the priests of the modern cult of scientific progress, and that you feel duty-bound to discredit any heretics who dare suggest that this insidious process might not be entirely beneficial.

Like other members of your cult, you have swallowed the neo-Darwinian thesis hook line and sinker. As I have already pointed out, the 'overwhelming evidence' that you refer to is based on the assumption that evolution and natural selection are synonymous. You reject the example I cite of this sleight of hand on the grounds that its author is a philosopher not a scientist. But Charlesworth is a scientist and he is equally guilty. He tells us that 'probably the most generally relevant prediction of the theory of natural selection is that episodes of rapid evolution should coincide with periods when the direction of selection is changing'.

Among the examples Charlesworth cites is that 'insecticide resistance evolves in populations exposed to a new insecticide'. Quite true, but how does this prove that the resistance is the product of natural selection? Why for instance can it not equally be attributed to cognitive and metabolic changes that can eventually be fixed genetically and that are part of the adaptive stock-in-trade of the highly dynamic and creative creatures that mosquitoes, for example, are known to be? Does this latter interpretation not fit in very much better with the way mosquitoes have actually adapted to DDT?

I remind you that some mosquitoes simply

learned not to alight on the walls of huts sprayed with DDT. Others developed a thick cuticle through which the DDT could not penetrate. Still others got much fatter so that the DDT could be sufficiently diluted, while others went so far as to develop an enzyme that broke down DDT into a perfectly harmless substance. Does natural selection provide a plausible explanation for these incredibly diverse and creative responses?

In any case, natural selection is a purely mechanistic process. Like the sorting of envelopes in a post office into two heaps – one for those to be posted (the fit), and the other for those to be returned to their senders (the unfit). The trouble is that envelopes don't evolve. As Ludwig von Bertalanffy (like you a developmental biologist) noted 'selection presupposes self-maintenance, adaptability, reproduction etc. of the living organism. These therefore cannot be the effects of selection'. They can clearly only be the effects of a very much more sophisticated process.

This suggests that natural selection is generally accepted not because there is 'overwhelming evidence' for it, but because it fits in so perfectly with our mechanistic and reductionistic world view in terms of which we see the natural world as random rather than orderly, and committed to perpetual change (progress) rather than overall stability.

Edward Goldsmith

Dear Edward,

Yours is a very peculiar world view which you never make clear. There is no doubt that individual scientists have said things that are reprehensible and that they have been wrong but that in no way undermines the scientific enterprise. Science is the best way to understand the way the world works and Puszta and others can and should be criticised on scientific grounds – the essence of science is peer review. Scientists are not a homogeneous group, they vary enormously in their views, and expertise.

It is of little use to insult the scientists you refer to as priests of a cult – if anything you are a bit cult-like with your holism and totally unsubstantiated rejection of evolutionary theory.

It is not a scientific argument to say that natural selection and genetic variation cannot account for the ability of mosquitoes to develop resistant strategies to DDT. You are a Lamarckian who believes that acquired characteristics can be inherited, and ignores the enormous evidence against this idea. I wonder if there is any science that you believe to be reliable and which you would trust or do you really think like some sociologists of science that it is just another religion, another set of myths.

Like you I care about the environment and it is only through a scientific understanding of nature that we will be able to protect it. For example, it is science that has warned us about ozone holes and global warming. That has to be important.

Lewis Wolpert

It is of little use to insult the scientists you refer to as priests of a cult – if anything you are a bit cult-like with your holism and totally unsubstantiated rejection of evolutionary theory

Lewis Wolpert

BEASTLY

'It may be cruel, but it can help us understand the human condition,' runs the argument for animal testing. Absolute rubbish, says **Alix Fano, who explains why testing rodents doesn't protect humans from toxic chemicals.**



There is a creature that lives two to three years, is unable to vomit, has no gall bladder, will give birth to 100 young each year, can synthesize Vitamin C in its body, and could be up to three billion times more cancer-prone than a human.

That creature is a mouse, and it is used for scientific research into finding a cure for cancer in humans.

Here is some more rodent information. Just as people react differently to chemicals depending on various factors, animal test results vary widely according to the species, sex, age, diet, stress level, and strain of the animal. For example, N2-fluorenylacetylamide has caused bladder cancer in male and female Slonaker rats, liver cancer in male, and breast cancer in female Wistar rats, and intestinal cancer in male and female Piebald rats. Benzidine has caused bladder cancer in humans and dogs, liver and mammary tumours in rats.

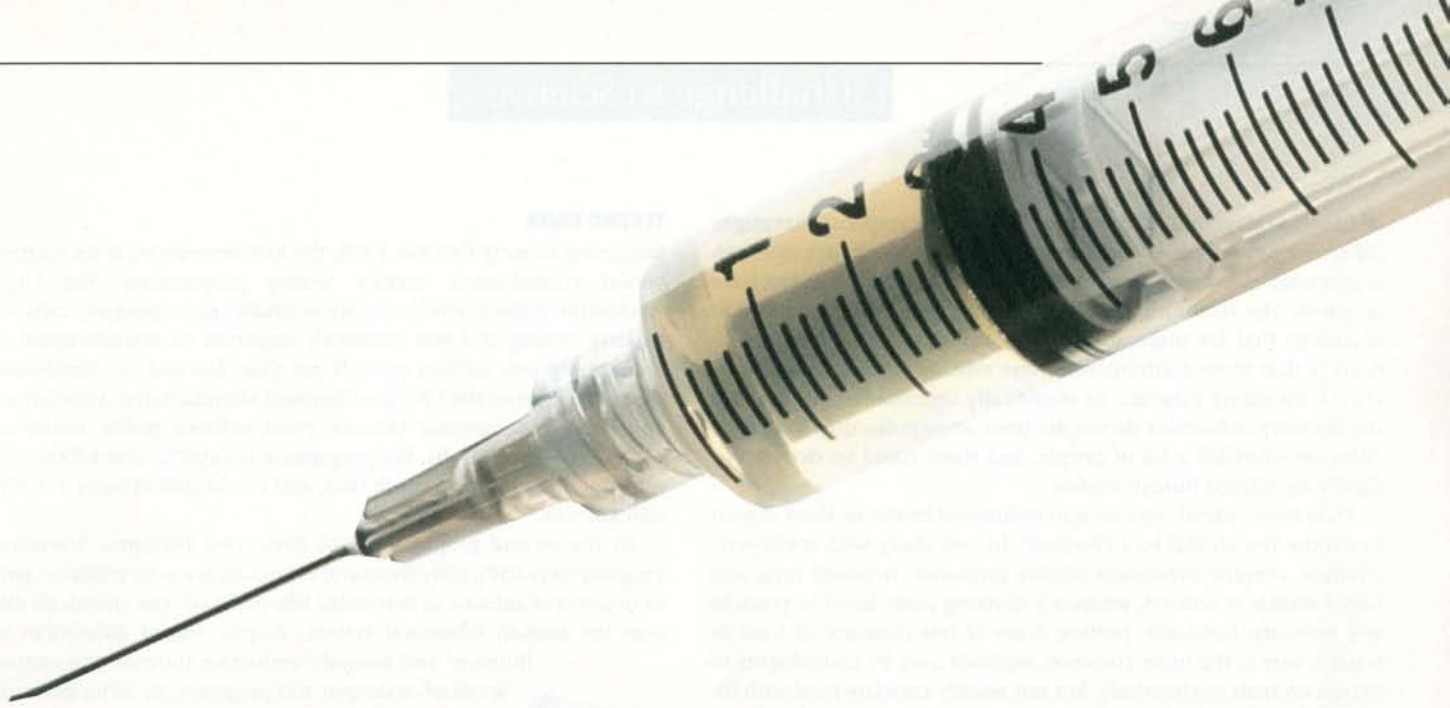
The apparently obvious conclusion from this is that laboratory animals do not have anything like the same biology as humans. Yet although animal toxicity tests have never been scientifically validated to determine whether they can effectively predict toxicity for humans, a mind-boggling array of animal-based data now fill toxicology manuals, textbooks, and computer databases. US regulators

have used these data to establish environmental health standards through the Food, Drug and Cosmetic Act of 1938, the (now defunct) Delaney Act of 1958, the Clean Air Act of 1970, the Safe Drinking Water Act of 1974 and the Food Quality Protection Act of 1996.

Some of the conclusions drawn from animal experimentation can make quite horrific reading. Take, for example, the studies on arsenic and its potential for causing cancer. While numerous epidemiological studies have proven that arsenic causes cancer in humans, toxicologists now acknowledge that arsenic rarely, if ever, causes cancer in animals.¹ Rats, for example, are remarkably resistant to the chemical and develop none of the illnesses – liver, bladder, kidney, and skin cancer – observed in humans. Only when researchers have gone to great lengths – implanting high doses of arsenic compounds in rats' stomachs, under the skin of newborn mice, and into the tracheas of hamsters – have stomach and lung cancers eventually been produced.

Animal tests with arsenic began in 1911 and are still ongoing today. Why? Have they prevented humans from being exposed to arsenic? In fact, no.

In February 2000, the Natural Resources Defence Council (NRDC), an environmental advocacy group, released a report which revealed



PRACTICE

that tens of millions of Americans have been drinking water containing unsafe levels of arsenic for decades.² But arsenic is not the only concern.

There are currently 85,000+ chemicals on the market – dyes, insecticides, fungicides, herbicides, rodenticides, soaps and detergents, synthetic fibres and rubbers, glues and solvents, paper and textile chemicals, plastics and resins, food additives and preservatives, refrigerants, explosives, chemical warfare agents, cleaning and polishing materials, and cosmetics – and 1,500–2,000 new chemicals are added to that toxic flow each year.

Government agencies, such as the US Environmental Protection Agency (EPA), have set up massive animal testing programs, using mostly rats, mice, guinea pigs, rabbits, dogs, cats, hens, and fish, to allegedly test the safety of these chemicals.

In the tests, animals are forced to eat and drink chemicals using such crude methods as gavage – whereby a tube is surgically inserted into the stomach; they are forced to inhale toxic vapours, have chemicals injected into their bodies, painted on their skin, and dropped in their eyes. In reproductive studies, pregnant animals are fed chemicals and induced to abort their young; rats and rabbits will have their

entire uteruses removed before expected delivery dates so their foetuses can be weighed, and dissected. The EPA still conducts the Lethal Dose 50 (LD50) test – recording how much chemical kills 50 per cent of the animals in a test group – even though a majority of scientists agree that the test is a lousy predictor of human risk. In these tests, animals suffer convulsions, severe abdominal pain, seizures, tremors, and diarrhoea. They bleed from their genitals, eyes and mouth, vomit uncontrollably, self-mutilate, become paralysed, lose kidney function, and fall into comas. Up to 2,000 animals may be killed in these ways to test just one chemical.

BUT DOES ALL THIS WORK?

Animals are typically tested using methods and doses that are at odds with real-life conditions. In one experiment involving the sweetener cyclamate, animals were given the human equivalent of 552 bottles of soft drinks a day. In two experiments with trichloroethylene, used as a decaffeinating agent in coffee, rats were given the human equivalent of 50 million cups of coffee a day. Herman Kraybill of the National Cancer Institute has stated that such high dosing can falsify an experiment in two ways: it can either poison the cells and

✦ tissues so severely as to prevent a carcinogenic response that might otherwise have occurred, or it can so overload and change metabolic processes as to cause a carcinogenic response that might not have occurred. The reasoning behind dosing animals with quantities of chemicals that are irrelevant to natural human (or animal) conditions is that these methods will more reliably produce acute toxic effects, including tumours, in statistically significant numbers. But the majority of humans do not die from acute poisoning. Rare toxicities are what kill a lot of people, and these could be detected in tightly monitored human studies.

Data from animal tests are also influenced by the method chosen to expose the animal to a chemical. In one study with methylene chloride, chronic inhalation studies produced increased lung and liver tumours in rodents, whereas a drinking study failed to produce any tumours. Ironically, putting doses of test chemical in food or water is one of the more common methods used by toxicologists to expose animals to chemicals. But rats readily associate food with illness and will avoid a food if they have been ill after eating it. How much an animal eats or drinks – as well as the animal's age, genetics, and metabolism – can influence the outcome of an experiment.

Some scientists claim that animal studies have shown how compounds like hormones can increase the risk of cancer in animals. But they fail to mention that circulating levels of oestrogen and progesterone differ as much as three-fold between rodents and humans. Veterinarians have seen elevated hormone levels in rabbits for up to 24 hours after the animals were moved from one room to another.

Stressful laboratory conditions and controversial dosing practices call into question the value of animal-to-human extrapolations and the vast databases of animal toxicity data. It has also been noted that the artificial laboratory environment, with its cold metal cages, sterilised food, water, and bedding, fluorescent lighting, temperature controls, and the pain of experimentation, is so stressful for the animals as to be causing them to develop cancer and other effects which would not be observed outside the laboratory.



TESTING TIMES

Beginning in early October 1998, the EPA announced three controversial animal-based toxicity testing programmes. The High Production Volume (HPV) Chemical Challenge programme calls for toxicity testing of 2,800 chemicals imported or manufactured in amounts of one million pounds per year. Devised in closed-door meetings between the EPA, the Chemical Manufacturers Association, and the Environmental Defence Fund without public notice or Congressional oversight, the programme is slated to cost \$700mn to implement,³ \$11mn to administer, and would poison some 1.3 million animals.

In the second programme, the Endocrine Disruptor Screening Programme (EDSP), sixty thousand chemicals are to be tested on tens of millions of animals to determine whether and how chemicals disrupt the human hormonal system, despite crucial differences in humans' and animals' endocrine systems. Circulating levels of oestrogen and progesterone differ as much as three-fold between rodents and humans, as mentioned before; and reproductive geneticist Jimmy Spearow found that the CD-1 mouse strain, favoured by toxicologists because it produces large litters, is 16 times more immune to the effects of endocrine disrupting chemicals than other mouse strains.⁴ Toxicologist John Giesy, a member of the National Academy of Sciences, has said it is 'unbelievably stupid and a waste of resources' to legislate endocrine testing⁵ given the high level of uncertainty surrounding the endocrine disruption theory.

At least 200,000 animals are slated to be killed in the third programme, the EPA's Child Health Testing Programme (CHTP) which requires 10 separate animal tests for each chemical (including the barbaric LD50 test) to allegedly 'assess the special impacts of industrial chemicals on children'. The EPA has refused to disclose the list of chemicals it plans to test, perhaps fearing the same sort of criticism it received for its HPV and endocrine disruptor programmes.

Various groups, including the People for the Ethical Treatment of Animals and the Physicians' Committee for Responsible Medicine (PCRM), have proposed an alternative to the EPA's animal testing plan. It would require the agency to take concrete action to eliminate or reduce chemicals – like lead, mercury, and pesticides – already known to be highly toxic to children. The agency has refused to consider the proposal, preferring instead to focus on setting 'safe' doses of chemicals for children in air, water, food, and breast milk.⁶

But a pamphlet published by the National Cancer Institute states, 'there is no adequate evidence that there is a safe level of exposure

ONE RAT'S FOOD IS ANOTHER MAN'S POISON

Some of the differences between humans and rats that question the validity of rodent-based tests for humans.

- Rats cannot tolerate more than 15 minutes of direct sunlight. Many farm-workers and labourers spend long hours working and sweating in the sun, which may enhance the toxic effects of pesticides on the skin.
- Rats don't have sweat glands like humans do, and lose moisture mostly through their paw pads and their tails.
- In humans, toxic materials like chlorinated hydrocarbons become stored in fatty tissues in the body and can become toxic as they are metabolised. Rats have a much higher activity of the 5-desaturase enzyme system, a part of the body's machinery for processing fats, which influences the

way they store and absorb chemicals. The toxicologist Joseph Rodricks states that metabolism differences can be extreme, and may be the most important factor accounting for differences in response to chemical toxicity.

- Rats have no gall bladder, whereas in humans the gall bladder stores bile which is released into the small intestine and aids digestion. In contrast to man, rodents are healthier when continually pregnant, and can produce up to 100 offspring a year. Their placenta has a different structure and function from the human placenta, and absorbs iron differently.

for any carcinogen... In addition, a low exposure that might be safe for one person might cause cancer in another'. Some people are chemically intolerant as evidenced by a condition called Multiple Chemical Sensitivity, which affects about 30 per cent of Americans.⁷ So how does the EPA establish allegedly 'safe' doses of chemicals for children, or for anyone?

One EPA document explains: 'To predict the risk [of cancer] for humans, the oral doses used in animal studies are corrected for differences in animal and human size and surface area which has been accounted for by the cube root of the ratio of the animal to human weight'.⁸ Essentially, animal data are churned through complex mathematical formulae, adjusted by some arbitrary numerical factors, and voilà! – out come the 'Maximum Contaminant Levels', 'Acceptable Daily Intakes' and 'Permissible Exposure Levels' – numbers representing the amount of chemicals in air, water, and food that a human can ingest over a lifetime with allegedly little risk of becoming ill.

In reality, weak environmental laws and lax enforcement ensure that animal-derived safety standards are ignored. We are surrounded by pollution which animal tests have clearly failed to prevent. Chemicals are left on the market, or used illegally even after they have caused cancer and other effects in humans and animals, rendering the existing safety standards for chemicals useless.

More importantly, all safety standards are set for individual chemicals and ignore that we are all exposed to thousands of chemicals in combination in our air, water and food.⁹



It seems unlikely that we will ever determine the cumulative effects of chemical pollution. Tests on non-humans will merely add layers of complexity and confusion to what is already an uncertain process.

MONEY TALKS

As in so many other branches of public policy, money is power and 'governments have a habit of backing the ideas of whoever pays the most tax'.¹⁰ Clearly, companies have relied on animal testing programmes to make chemicals acceptable to regulators, attractive to consumers – and to protect themselves from costly litigation. Cost-benefit decisions have ensured that most chemicals remain on the market, regardless of whether they have caused cancer and other effects in humans and animals. Animal testing has become the principal component of a regulatory system that, in making concessions to industry, has lost sight of its mandate to protect human health. And humans have become the ultimate 'guinea pigs' in an increasingly polluted world.

Unfortunately, a number of mainstream environmental groups, such as the Environmental Defense Fund and Greenpeace, still believe that animal tests have effectively protected public health and the environment and led to chemical bans.

But the array of chemicals that humans have become exposed to, since animal testing programmes were institutionalized in the 1920s, has grown exponentially; and only a small handful

TAILS OF EXPOSURE

If it hadn't happened, you wouldn't believe it could happen.

- Animals exposed to high doses of polychlorinated biphenyls (PCBs) – chemicals used extensively in household and industrial products – developed liver and kidney damage, tumours, gastric disorders, bronchitis, miscarriages, skin lesions and hormonal changes. Despite this, in the early 1970s, the General Electric Company was allowed to legally release more than a million pounds of PCBs into the Hudson River, and 1,900 pounds of PCBs were discharged into the Great Lakes in 1991 with the EPA's blessing. Although PCBs were banned in 1976, an EPA report released in 1998 revealed they were still present in the Hudson River.
- On 3 September 1999, New York City officials approved aeri ally spraying eight million citizens with the restricted-use pesticide malathion to allegedly control an outbreak of the mosquito-borne West Nile virus, a virus which had killed four elderly people. The EPA has determined that malathion is acutely toxic to mammals and has listed it as a possible human carcinogen; and the World Health Organisation has refused to set 'safe' limits for the pesticide. New York State and federal laws prohibit spraying malathion over bodies of water, though city officials allegedly instructed helicopter pilots to spray 'river to river'.
- Methyl parathion, an organophosphate insecticide (OI) manufactured by Cheminova, has been in use for over 20 years to control a variety of insects on agricultural crops. Dozens of LD₅₀, cancer, inhalation and reproductive toxicity tests on pregnant animals have been performed with methyl parathion. Humans exposed to the chemical have experienced symptoms like depression, headaches, dizziness, memory impairment, blurred vision, abdominal cramps, tightness in the chest, nausea

and weakness – symptoms that go undetected in animals. In August 1999, the EPA announced that it would cancel the chemical's use on all fruit and some vegetables with a view to protecting children under new rules established by the Food Quality Protection Act of 1996. But it would allow methyl parathion's continued application.

- Epidemiological studies of humans exposed to dioxins – byproducts of industrial combustion, and chlorination processes – have provided positive evidence of cancer, neurological damage and birth defects. The EPA has dubbed dioxin a 'probable human carcinogen'. Tests in rabbits, hamsters, mice, rats, monkeys, chickens, minks and guinea pigs with dioxin produced 5,000-8,000-fold differences in LD₅₀ values in different species, and more than 300-fold variations in different strains of the same species (rodents), leading the EPA to describe the range of responses as 'dramatic' and 'enormous'. Despite this, animal data (liver tumours in female rats), rather than existing human data, were used worldwide to establish standards of 'acceptable risks' for human dioxin exposure. Humans now carry dioxin levels hundreds of times over the 'acceptable cancer risk', as defined by EPA.
- A March 1999 US Congressional report revealed that Los Angeles residents were breathing levels of toxic pollution hundreds of times higher than standards set by the federal Clean Air Act. That year, the agency admitted that 'virtually every American inhales slightly unsafe levels of at least eight cancer-causing chemicals'. These include benzene, chloroform, formaldehyde and methylene chloride – all dubbed animal carcinogens in the 1970s.

of chemicals have ever been banned. Some of these, like DDT, and DES, continue to be used illegally; and mixtures of carcinogens, like PCBs and dioxins, persist in our environment with unknown consequences.

On a philosophical level, animal testing is part of the same life-destroying paradigm that environmentalists claim to oppose. It is commercialised exploitation in its most brutal form. Exposing tens of millions of animals, dozens of animal species, to unimaginable pain and suffering under the pretext of protecting public health, while simultaneously allowing the continued production and release of thousands of poisons into the environment, is unethical and unsound public policy. ♦

Alix Fano is the author of *Lethal Laws: Animal Testing, Human Health and Environmental Policy* published by Zed Books, UK/St. Martin's Press, US, 1997.

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SO WHAT ABOUT THE ALTERNATIVES?

A multitude of non-animal methods exist which could screen chemicals quickly, cheaply and accurately for every toxic effect under the sun.¹¹

Swedish toxicologist Bjorn Ekwall, who tested over 75 chemicals in human cells (in vitro) and validated the tests in 67 different laboratories, found that in-vitro tests were more accurate than animal tests in predicting human toxicity. He believes that a battery of cell-based tests, using a variety of human cell types, could predict up to 90 per cent of toxicity, allowing for the speedy removal of toxic substances from the market, instead of waiting to see whether or not they cause cancer, developmental or other effects in animals.

In-vitro tests are also much cheaper, costing \$100 per chemical compared to \$2m+ for an animal test, and results can be obtained in a matter of hours, compared to between two and 10 years for an animal test. In addition to in-vitro tests, there are living tissue equivalents (such as artificial skin and corneas), phosphorescent bacteria which can detect chemical irritants, light-based biosensors which can measure cellular injury and recovery, and computer-based structure-activity relationships, such as the MetabolExpert and HazardExpert, DEREK, COMPACT and TOPKAT systems, which feed mathematical models of chemicals' molecular structures into computers to predict toxicity. Similarly, physiologically based bio-kinetic models (PBBKs) translate biological relationships into mathematical equa-

tions, and can be used to study metabolism and excretion rates for chemicals as well as determine the relationship between dose and effect, at doses of chemicals much lower than those used in rodent studies.

Finally, improved analytical, diagnostic and sampling techniques, such as magnetic resonance imaging and biomarkers, have allowed physicians and scientists to greatly increase the amount of information they can collect from human beings. For example, fluorescent tracers and video imaging have allowed industrial hygienists to measure farm workers' exposure to pesticides.

Unfortunately, closed-mindedness, bureaucracy and inertia have prevented these methods from being widely used in the regulatory arena.

In June 1999, after years of pressure, the US government's Interagency Committee for the Validation of Alternative Methods finally recommended the acceptance of the Corrositex in-vitro assay for assessing skin corrosivity, replacing a crude test in which chemicals were rubbed on animals' abraded skin. But Corrositex and other innovative tests like it have been in existence for decades and the committee's pace has been snail-like. Corporate executives like Richard Ulmer, CEO of InVitro International and maker of Corrositex, have been pushing the US government to adopt validated in-vitro systems for almost two decades. He is baffled by federal agencies' unwillingness to embrace these faster, cheaper methods.

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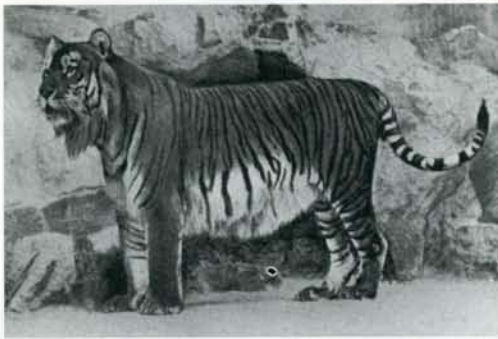
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Which is the odd one out?



No idea? Well, why should you have? Few people know the full horror of what's happening to the tiger. And fewer still are doing anything to stop it.

The truth will shock you. Two of the three tiger sub-species you see here are already extinct. The first photograph is of the Caspian tiger. The last one died in the 1970s. At the bottom is the Javan tiger, wiped out in the 1980s. The 'odd one out' therefore is the beautiful animal in the middle, the Amur tiger. It still survives in pockets of Siberia, but with its numbers now believed to be as low as 420, this may not be true for very much longer.

You hold the answer

It is to protect terribly vulnerable animals like these that WWF has launched Animal Watch. But Animal Watch cannot succeed without you. It costs just £2 a month to join and your money goes straight towards funding vital WWF projects for vanishing species like the tiger, black rhino and Asian elephant. These include the six anti-poaching patrols we help fund in Siberia – projects that represent the only effective tiger-protection force in the whole region. Your support also helps our work with local communities as we seek ways to secure a long-term future for the tiger.

Please look again at the Amur tiger. Surely you'll agree that this creature is too beautiful to die? By joining Animal Watch you will be helping to give both the tiger and other endangered animals a real chance of a future.

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CC05



THE LOST WORLD O



The last of the great explorers is wondering today what is left of the world he once roamed. Writer, traveller and photographer Wilfred Thesiger reflects with Charlotte Edwardes on the nine decades of his extraordinary life

I'd like to start by saying the invention of the internal combustion engine was the single biggest disaster in history,' says Sir Wilfred Thesiger.

The veteran explorer, writer and photographer, now in his ninetieth year, is sitting in his high back chair, hand on cane. A row of eight pairs of good leather walking shoes spans one side of the room. The walls are decorated with sepia photographs of Arabia. The pictures range from hot desert scenes as described in his most famous work *Arabian Sands*, to pictures of townsmen in 'dishdashas' and dramatic mountain scenery. They show the world as he once saw it: unspoiled, diverse and remote.

Outside his retirement home, the rain falls on Purley. 'What I hate most are motorcars and aeroplanes; they have wrecked the world and robbed it of all its diversity', he says. 'If I could've done my travels by car, what would've been the point?'

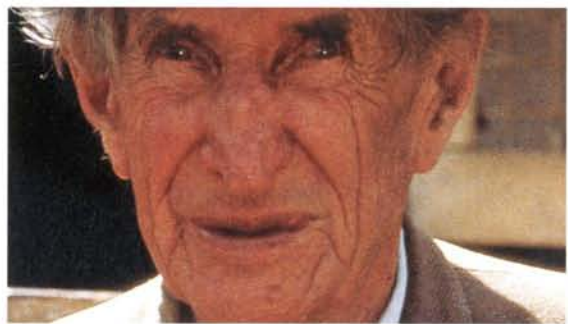
Sir Wilfred Thesiger is an obvious hero of the green movement. Since the 1930s, far earlier than most card-carrying members were born, the explorer was a vociferous opponent of motor transport.

While his contemporaries applauded the progressive leap that hailed the introduction of commercial air flight, Thesiger damned it. A mention of Amy Johnson, the first woman to fly solo to Australia in 1930, elicited from him a cry of, 'Oh God damn the bloody woman!'

To Thesiger the Citroën expedition across the Sahara Desert was equally ominous. 'I was livid,' he says. 'Here were motorcars in a place where I knew they didn't belong.' Thesiger is well qualified to comment on the damage caused by motor transport. He has over 50 years of travelling experience among the indigenous tribes of Africa and the Middle East.

The five most memorable years of his life were among the Bedu in Arabia's southern desert – the half-million square miles of the Empty Quarter. He also travelled with the Danakil in Ethiopia, where he was born, in the swamps of the Upper Nile and in the mountains of the Karakoram and in the Hindu Kush. For seven years he lived with the Marsh Arabs in southern Iraq – an area

F THESIGER



believed by biblical scholars to have contained the Garden of Eden.

Just to reach the Bedu, or the Marshmen, Thesiger was forced to travel as they did: by foot, camel, mule or raft. Motor transport has changed all that. The challenge that drove Thesiger is lost, and with it, not coincidentally, the traditional life of these communities.

'Anyone looking for the life I led will not find it', he says. 'I was only just in time. When I returned to the Danakil country, years later, I saw cars, tarmac road, service stations and convoys of lorries carrying petrol from Assab to Addis Ababa.'

His experiences have naturally led him to question some of the most basic assumptions underlying modern thought, particularly the commonly held belief that 'progress' as understood by most people today leads inevitably to social improvement. Perching on his single bed opposite him, it is impossible not to feel some sense of awe of this great man as he effortlessly turns Western values on their head.

NATURAL WEALTH OF NATIONS

Born in 1910, at the cusp of an era when technology was being celebrated unquestioningly for the profound changes it brought to humanity, Thesiger's lasting legacy may well be as chronicler of the tragic death of pre-industrialised tribes. Through his travels, he recognised in those he encountered a feeling of wealth that resulted not through the accumulation of clever gadgetry but rather through the stability, dignity and self-sufficiency that traditional society offered. 'A kind of natural wealth,' he sighs, 'that you'd be hard pushed to find today.'

'I have led a hard life and a life of penury.' He has said these words often and he says them smiling. 'That was my choice.' Certainly among Thesiger's many admirers there are few who would readily sacrifice the comfort of England and give away their life's earnings in order to live under the same conditions. Even fewer would survive. But his upbringing gave him a head start, and his ambition to explore the wilderness was shaped by the circumstances of his birth.

He was, he says proudly, the first British child to be born in what was then Abyssinia, now Ethiopia. His father was the British Minister in Addis Ababa and a friend of Ras Tafari, who was later crowned as Emperor Haile Selassie.

In childhood, he and his brother Brian led a free and adventurous life; riding unsupervised, playing with airguns and oblivious to the restrictions of formal education. To this end, his psyche was primed for all that confronted him in later life.

'We came back to England when I was eight. It was foreign to me – I'd never seen another English boy and suddenly I was surrounded by them.'

At prep school his tales of spear-carrying tribesmen and tiger

shooting in India with his uncle Lord Chelmsford, the then Viceroy, were met with mirth and incredulity. 'My experiences were quite unlike anything my school contemporaries had seen,' he adds.

'He was called a liar,' says Alexander Maitland, a friend and Thesiger's official biographer. 'And he was understandably devastated – he'd never been spoken to like that before and the experience stayed with him. It took a long time before he overcame a deep mistrust of his contemporaries.'

Thesiger enjoyed Eton, however, and made the best of a more liberal policy towards pupils. But it wasn't until he was at Oxford, where he earned a boxing blue and his characteristic broken nose, that he was able to fulfil his plans of returning to Africa and staging his first expedition.

The opportunity arose in 1930 when, following the death of his father, he received a personal invitation from Haile Salassie to attend his coronation as the representative of his family. Following the ceremony, the twenty-year-old undergraduate left Addis Ababa to follow the river Awash into the wild and inhospitable Danakil territory.

'The river's end posed the last important problem of African discovery,' he explains. 'It was trifling compared with the search for the source of the Nile, but still, it was a challenge in an age of vanishing opportunity.'

'The Danakil rate a man by the number of men he has killed and castrated,' says Thesiger. 'They wore about their stomachs leather thongs, one for each of their victims. I was warned by Sir Sidney Barton (the then British Minister) not to go further down the Awash than Bilen. He said to me: "It would rather spoil the effect of the coronation if you got yourself cut up by the Danakil".'

Since a Frenchman had been mutilated there only three years earlier, Barton's warning was quite reasonable. All that remained of the body – one leg – had been taken to Addis Ababa and formally decorated by the Emperor. Asked if he was scared, Thesiger smiles. 'Well, you wouldn't be travelling there if you were.'

HOSTAGE TO FORTUNE

When he describes the expedition, Thesiger reveals a ruthlessness born of his background. 'When you travelled you took with you someone whose life was in your hands – a hostage. Then if his tribe gave trouble, you could kill him.'

Thesiger discovered the destination of the Awash river three years later and then went on to serve in the Sudan Political Service before fighting with the SAS in the Western desert. It is around this time that Thesiger's writings show an increasing admiration for and understanding of tribal customs.

Of an early experience with the Nuer tribe he wrote: 'Strikingly



From Chilingi to Ladakh Some of the faces and places encountered during Thesiger's unique life. Images from *Among the Mountains: Travels through Asia*, published by Harper Collins.

beautiful people, the Nuer were completely naked except for the married women who wore a fringe round their waists. Intensely proud, they did not lie or steal and had the strict code of morality that is so often found with nakedness and tends to disappear with it.'

Shortly after this, a chance encounter with an entomologist was to affect the course of Thesiger's life.

'I met with O B Lean and he asked me if I would be willing to examine locust outbreak centres in the Empty Quarter of Arabia. All my life was a prelude to what lay ahead. I was determined to travel as an equal of the Bedu,' says Thesiger. 'So I travelled in their dress, without shoes and with a dagger and a cooking pot. I took only bare necessities and my Leica camera and a compass.'

Thesiger is a champion of the primal virtues: loyalty, honesty, modesty, honour and generosity. These were qualities he found in the traditional life of the Bedu and, in retrospect, the desert has become a metaphor for everything he loves. He found there, he says, 'a freedom unattainable in civilisation.'

Illustrating his admiration for Bedu hospitality, he says: 'We killed a hare and talked of nothing else all day – we hadn't eaten meat for months. We were busy cooking it when we saw four Arabs coming towards us. We invited them to join us and, since they were our guests, we offered them food. We gave them bread and dates and finally, at my Bedu companions' invitation, they ate our hare. This was the extent of Bedu hospitality to strangers, and, I must admit, even I found it difficult to comprehend the extent of their generosity. As they ate our hare I gazed upon our guests with a murderous look.'

The hardship of his nomadic desert existence is unfathomable by Western standards. In the deathly desert temperatures, Thesiger survived on barely a pint of water a day. But as he explains, it is this hardship that provides a key to understanding the spirit and culture of these tribes.

He told the writer Timothy Green in 1970: 'Under a hard life people have an essential nobility. I don't believe comfort and security recompense their way of life. You read now of Eskimos living off tinned fish and losing their teeth or the Polynesians, who were a laughing happy people until they were persuaded that sex was evil.'

'The conditions of the Arab in the desert might be called dreadful by some people – there was hunger and thirst but the human spirit lifted itself above this hardship and danger. The Bedu for example, as I first knew them, were a laughing happy community. I doubt if you get the kind of laughter in the slums of Johannesburg or Nairobi that you still experience among the Samburu in Northern Kenya.'

In the Fifties, as the discovery of oil began to alter Arabia irrevocably,

Thesiger headed to the Marshes of Iraq. Among the Marshmen, or Madan, he found, 'five thousand years of history, the pattern of life little changed'.

Indeed, in the marshes – where water buffalo lived among the reeds alongside some 200,000 tribesmen – the sound of an engine had never been heard. Here, Thesiger lived in an archaic stillness broken only by the sound of a bird cry, a canoe paddle in water or perhaps by a child singing.

In *The Marsh Arabs*, he wrote, 'Each night as I lay down to sleep, a cloud of mosquitoes settled on my face and a weight of fleas moved under my blankets, but I accepted this as a small price for the contentment I had found'.

GULF BETWEEN CULTURES

The traditional life of the Madan has now all but been wiped out and much of the marshland drained into barren desert. Though successive Iraqi governments have tampered with the marshes, viewing the hunter gatherer subsistence lifestyle as unworthy of a modern state, none have been as brutal as Saddam Hussein's regime.

Following the Gulf War, rebel Shi'a forces used the region's natural cover to escape reprisals from Hussein's army. Helicopters flew over the area firing indiscriminately into the waters. A systematic policy of drainage began in 1992. Areas where waters were once five feet deep are now dry cracked mud, and Baghdad has enforced resettlement, moving the population into the cities where the internal security services can exert control.

Less than 10,000 Marsh Arabs remain – their traditional lifestyle literally drained away. Dykes prevent floodwaters replenishing the marshes and instead the man-made 'Saddam River' now carries the waters to the Gulf, starving the water buffalo, fish and birds.

When asked what might have become of his former companions Thesiger changes the subject, clearly distressed. Yet while few people would contradict Thesiger's views on the plight of the Marsh Arabs, his passionate belief that traditional societies around the world should be protected against the modern onslaught has attracted fierce criticism.

He told his friend Alexander Maitland, 'I don't want to have anything to do with the developments. While others are desperate to introduce hospitals, schools and motor-roads, I'd be happy to see none of these things. I'm not saying it's right or wrong. It's just my own personal reaction: I'd like to keep them free of all this'.

He admits that there are inconsistencies in an argument like this as, while in the company of the Marshmen, he doled out antibiotics and carried out circumcisions using Western remedies to prevent infection. 'When it comes down to it,' he says, 'everybody's human' ❖



to some degree. If someone is suffering from yaws or trachoma, of course in your own small way you will try to help.'

Critics regard his views as 'a desire to keep primitive people in an aboriginal state' and accuse him of needing to justify the romantic memories of his boyhood. One biographer, Michael Asher, argues that Thesiger 'had become trapped in the traditionalist landscape he had enshrined in his books. He knew deep down, perhaps, that the image of traditional people he had created in his books was too constricting for them: it allowed them no space to move and grow'.

But Maitland offers another perspective. He argues that Thesiger's formative years in the Sudan consolidated his affection for the tribes; he admired their ethics and social systems. 'Tribes such as the Galla and Danakil, like the Bani Hussain, the Nuer and the Dinka, blended with the country, their daily lives closely linked to all the phases of the natural cycle, be it of weather or of wild beasts.'

Where the modern centralised state imposed change upon traditional cultures it destroyed their harmony, and eventually their very existence. In the case even where well-meaning outsiders sought to 'improve' a situation, it was invariably by use of an alien set of assumptions and yardsticks that they inaccurately measured that situation. As Thesiger points out, it is not appropriate for a society like ours, rife as it is with its own deep social ills, to pass judgement on lifestyles that we can't understand.

A clear example of this was in Sudan, where government proposals effectively replaced the Dinka's cattle-based economy with cotton.

'The Dinka as a nation would vanish,' says Maitland. 'The remnant name would amount to little more than a meaningless administrative reference. Even Thesiger's most persistent critics must acknowledge that many of his worst fears are justified.'

Maitland asks: 'Is Thesiger so very wrong in wishing to prevent such a fate befalling a people? Is he so misguided in his desire to preserve their basis for religious observance and identity?'

'The whole splendour of the animal world, conservation of which now rightly commands massive world wide support, is rooted in its diversity, the distinctive character and interdependence of species, each of which contributes to the whole from its own separate resources.'

'Is it right that mankind should be accorded less and that the splendid panoply of the world's races should be robbed (in the cause of material progress) of their traditional inheritance and the right to live as contributing independent communities? Thesiger thinks not.'

In 1961, aged 50, Thesiger arrived with his camels in Maralal in Kenya. Eventually he hoped he would see out his years living near this rural town which was then just a cluster of shops and administrative buildings in the heart of Samburu country.

Even by then, Thesiger says, the 'old Africa' had gone. Jeeps and lorries trundled down asphalt roads and the safari package tour was in its infant stages. Big game, he says, has suffered badly in the time since he arrived in Kenya. The elephant herds of 'old Africa' have simply been shot out of existence.

But Thesiger's own lust for big-game hunting in his early life makes strange reading now. He counters this: 'This incessant killing sounds reprehensible today, but it can only be judged in the context of the

past, when that part of Africa was alive with animals, and it was possible to see a thousand elephant in one day'.

In the last 20 years it is estimated that Africa has lost over half of its 1.3m elephants to poachers and Kenya, three-quarters of its herds. Some observers estimate that all Africa's wildlife will be in danger of extinction within 40 years if numbers diminish at this rate.

And it's not just poachers. Land closure and increased farming have blocked migration routes, and feeding grounds are limited – a significant problem for an animal that consumes up to 3 cwt of plant food each day. In the best of circumstances, eating is a full-time occupation for the elephant.

'The few score animals that I shot, largely for meat, were less than the toll taken by a pride or two of lions during the same time,' he says.

'In Kenya I have done what I could, as an Honorary Game Warden, towards the conservation of wildlife, but it would be hypocrisy to pretend that I regret those distant golden days'.

'I had no white hunter at my side when I followed a wounded lion into long grass or faced an angry elephant. Time and again I stumbled back to camp unsuccessful. Such hunting bore no resemblance to the safaris that I encountered years later in East Africa, equipped with cars, lorries, radios and refrigerators and organised by professional hunters.'

Following the deaths of his two adopted sons and unable to cope with his failing eyesight, Thesiger at last returned to England. Having dispensed with most of his worldly possessions, Thesiger now surrounds himself with a basic collection of belongings.

The most important of these are his stunning black and white photographs – soon to be the focus of an exhibition in Paris. In his life he has compiled more than 70 albums of his prints which he has

donated, together with all his original negatives, to the Pitt Rivers Museum in Oxford.

He has maintained his friendship with his desert companions, most notably bin Kabina and bin Ghabaisha, to this day. He has recently returned from a five-week trip visiting them in the Gulf. Begrudgingly, of course, he was forced to travel there by aeroplane.

A nurse arrives with tea and we offer to help Sir Wilfred. 'You won't know how to make my tea as I like it,' he announces. 'You'd better let me.' He sits back in his chair. 'I don't think mankind can survive more than 20 more years,' he says thoughtfully.

After hearing his own tales of survival against the odds, it is almost ironic that Thesiger is gloomy to the point of despair about mankind's ability to survive on this planet.

'In my own way I'm also responsible,' he continues. 'The maps I drew and published allowed those with more commercial intentions into these areas to corrupt a people whose spirit once lit the desert like a flame.'

Suddenly he breaks into a laugh. 'Do you know that my father was almost posted to America?' he asks. Has he ever been to America? 'No, no. I've never set foot in that country. For me, America represents everything that is wrong with the world.' How different would his life have been had he grown up there? He pauses. 'I always maintain that I would have found my way to Africa eventually... Yes, I'm quite certain of that.' ♦



He sits back. 'I don't think mankind can survive more than 20 more years,' he says thoughtfully.

Try to imagine ...

- your family being forcibly evicted from home
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- being told that your garden is no longer yours to cultivate
- having no means to object to something which you consider to be wrong or unjust
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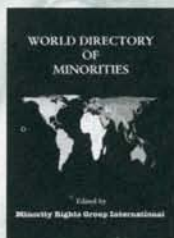
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CONSUMING MISERY

Modern consumer society isn't just wrecking the planet – it is also wrecking our minds. Across the world, the richer a nation gets, the more unhappy its people become. Clinical psychologist Oliver James asks why.

It is hardly news that advanced, dog-eat-dog, American-style capitalism is bad for the planet. Every year, the evidence shows this more and more clearly. It is no longer possible to dismiss the link between climate change and carbon dioxide emissions as the weather becomes crankier and crankier. Nor is there much doubt any more that the use of hormones, antibiotics and nitrophosphates in the food chain is weakening immune systems, lowering sperm counts and creating a wide range of chronic illnesses.

But to the lengthening list of environmental problems caused by the way we live now must be added the many psychological problems which our modern way of life is causing. For modern consumerism is not only wrecking many of our natural life-support systems – it is also wrecking our minds. Ironically, the raging materialism of the modern world is not even fulfilling the function which is used by its supporters to justify its existence – making people feel better off.

MONEY CAN'T BUY HAPPINESS

Put simply, there is no correlation between the wealth of a developed nation and the amount that its citizens say they are happy or satisfied with their lives. The wealthiest are by no means the happiest, and some of the poorest are among the most contented. What is more, the closer a nation approximates to the American model – a highly advanced and technologically developed form of modern capitalism – the greater the rate of mental illness amongst its citizens.

A 1995 World Health Organisation (WHO) study opened with an encouraging account of improvements in life in the developing world. 'In the past 50 years, the world beyond North America and Western Europe has seen improvements in health care and living conditions as breathtaking in their sweep as the technological changes experienced in richer areas of the Northern Hemisphere.' This upbeat message, though, soon gave way to a bleaker one. 'But just as in Western Europe and North America, [in the developing world] there is a downside to these remarkable improvements in the measures of daily survival and societal function. Along with the increase in life expectancy has come an increase in depression, schizophrenia, dementia, and other forms of chronic mental illness... Along with economic growth and various social transformations has come a marked increase in alcoholism, drug abuse and suicide... The incidence of violence against women, young and old, has increased sharply.' Certainly, violence against the person recorded by the police in England and Wales has mushroomed from 6,000 crimes a year in 1950 to 239,000 in 1996. Even taking into account that more crimes get reported today, this is still a remarkable increase.

Three years later, a 1998 WHO report continued the theme, pointing out that depression was now fourth highest in the world league table of diseases. Significantly, depression was the second most common disease in high-income nations, but fourth in the middle and low-income ones. The same was true of all other mental illnesses: from schizophrenia to obsessive compulsive disorders, the more economically advanced the nation, the greater the amount of mental illness.

Compared with 1950, people today throughout the developed world are much more likely to be discontented, angry and self-hating ('I'm fat, I'm stupid, I'm ugly' etc). The evidence is clear: in spite of being materially richer, people in rich countries are emotionally poorer. In the case of Britain, a 25-year-old today can be up to 10 times more likely to suffer depression.

Similarly, in America, a survey of over 18,000 adults found that a person born during 1945-55 was between 3 and 10 times more likely to suffer major (ie severe, life threatening) depression before the age of 34 than a person born during 1905-14.

What, then, is the probable overall extent of actual mental illness as defined by official psychiatric criteria in developed nations today? The best guess comes from a huge survey of the American population done in the early 1980s by Lee Robins. Over 19,000 people were interviewed in five different sites around the country. The conclusion was that 20 per cent of the total American population suffers from a mental illness (as defined by the psychiatric bible, the DSM - the *Diagnostic and Statistical Manual of Mental Disorders*) during any given 12 months and 32 per cent will suffer at some point during their lifetime. Because the definitions used are so strict, the real incidence of unhappiness is almost certainly much higher than this. One of the most respected authorities in this field estimated that for every one person fitting the rigorous criteria employed by the DSM there are two to three who are close to fitting them.

In other words, the proportion of Americans suffering serious problems in any one year was between 40 per cent and 60 per cent in the early 1980s. This is supported by studies which take a broader view of what is meant by angst, such as one which found that three quarters of the population suffers from one or more unreasonable fears, spells of panic or general nervousness. Given the likelihood that rates of psychiatric morbidity have increased since these studies were done in the early 1980s, the proportions are likely to be even greater today. For once, it is no exaggeration to use the word 'epidemic' in describing a social trend.

Whilst all these statistics can be disputed, and the magnitudes of increase adjusted accordingly, few psychiatric epidemiologists dispute that this change is real and substantial. The question is:

why? Why should we have become so emotionally impoverished when economically wealthier?


'There is no correlation between the wealth of a developed nation and the amount that its citizens say they are happy or satisfied with their lives.'

THE SEROTONIN SOCIETY

Depression, aggression and compulsion have all been shown to correlate with low levels of the brain chemical serotonin – the chemical whose levels are increased by taking modern antidepressants like Prozac. Because many more of us admit that we suffer from these problems, it is highly probable that a higher proportion also has low serotonin levels.

First identified in the 1940s, serotonin is just one of thousands of chemicals found at the place in the brain where physics and chemistry meet, the synapse. The synapse is a gap between the neurones which electrical impulses pass down.

When the electrical current reaches the end of a neurone, it causes a chemical reaction in the synapse. Chemical messengers – including serotonin – are dispatched and pass a message to the next neurone, which then fires off the next electrical impulse, and so on it goes.

Many people unconsciously medicate their low serotonin levels using modern 'drugs of solace'. Alcohol raises levels in the short term, lowering them subsequently. MDMA, the key ingredient in the recreational drug Ecstasy, leads to a temporary flooding of serotonin in the short term but, at least in animals, kills the serotonin receptors, 

causing permanent damage. Smokers are twice as likely to be depressed – and therefore to have low serotonin levels – than non-smokers.

Most people imagine that if a chemical is implicated in human behaviour its levels are caused by other chemicals or by genes. But in the case of serotonin, levels in animal and human brains largely reflect what is happening around them, socially and emotionally, now and in the past. If you are feeling lousy today, or in urgent need of a drink or a fix or a fling or a fight, you probably have low serotonin levels caused by the way we live now.

THE DRIVE TO 'SUCCEED'

Serotonin levels in the brain, then, are influenced by outside events. For example, the social status of an individual within his or her society can affect serotonin levels – and therefore happiness – significantly. The importance of social status for serotonin levels has been definitively demonstrated in studies of vervet monkeys conducted over the last 20 years by Michael McGuire at the University of California. He has shown that dominant male vervets have higher levels of serotonin than subordinate ones. But which comes first – the high status or the high serotonin levels?

In a series of experiments, changes were made to the 'status' of male vervets, so that previously subordinate monkeys became dominant, and the previously dominant became subordinate. Sure enough, serotonin levels tracked these status changes. When dominant vervets were removed from their group, for example, a battle for dominance ensued among those remaining, previously subordinate, males. The winner had a higher level of serotonin once he had established his new status than beforehand: becoming dominant caused the increase.

What is true of vervets is almost certainly true of us. Dominant, driven, successful students have been shown to have higher serotonin levels than others. The fact that subordinated or 'low status'



In a 70s test, a psychologist found that men who watched Charlie's Angels gave the average female a lower attractiveness score than did those who watched the news

and young. Modern life makes us feel like losers.

A primary cause of these changes is the rise of individualism and the increase in our aspirations. Previously oppressed groups, like women and low income people, have come not only to believe that they can enjoy hitherto unimaginable status and wealth, but to regard them as an entitlement, even though society is usually unable to deliver them.

When expectations outstrip real outcomes, we feel either aggressively resentful or depressed. If reality falls short of our high hopes, we either blame The System or ourselves. Whichever it is, rates of depression and violence rise as a result, and we finish up feeling like losers – low status and low serotonin. Until reality can catch up with aspirations, this emotional deprivation will continue.

BABE-WATCHING

In developed nations, women particularly suffer. These societies have raised female expectations sky high, but have been unable to deliver, creating huge disappointment. Depression, eating disorders and

groups within modern society, such as women and people on low incomes, are more prone to low serotonin problems (depression and compulsion in women, aggression in men) is also strongly suggestive of a low serotonin-status link.

WERE OUR PARENTS HAPPIER?

But this would not seem to help us to discover why such problems have increased across the developed world since the 1950s. Why should there be more low-serotonin people around today, a time in which a greater proportion of the population than ever before are wealthy and middle class?

The explanation, I believe, is twofold. Advanced capitalism fails to meet our evolved need for status; and it is destructive of the stable attachments to which we are instinctively drawn – it drives a wedge between mother and father, parent and child, elderly

COMPULSIVE BEHAVIOUR ON THE RISE

The use of illegal drugs like marijuana, cocaine and heroin has increased exponentially, most dramatically among the young. In the US, 60 per cent of 18-29 year olds will use an illegal drug in their lifetime (compared with 36 per cent of 30-44 year olds) and 13 per cent will become fully-fledged abusers. 15 per cent of American 12-34 year olds have taken cocaine.

Alcohol consumption has increased in all European nations except France (which started at a very high level), as has cirrhosis of the liver.

The USA is virtually the only developed nation not to have had an increase in heroin addicts in the last 20 years, because it was already endemic there – over half a million addicts in 1976, the same today. By contrast, Italy went from 343 addicts in 1976 to 183,386 in 1991 and Britain from 79 registered addicts in 1979 (2,800 methodone users in 1980) to 50,740 registered heroin abusers in 1990.

'plea for help' suicide attempts are 2-3 times more common in women than men (see Disturbing figures below).

In tandem with the emergence of relative emotional deprivation after 1950, extremely damaging and subordinating patterns of 'social comparison' have developed. This has occurred in all aspects of our lives. Witness the daily avalanche of media images of scantily clad, slender women in magazines, newspapers and television, with 'perfect' faces and skin. No wonder female depression and eating disorders have mushroomed, if women are forced dozens of times a day to compare themselves to such ideal models.

In a seminal 1970s study, psychologist Douglas Kenrick barged in on male students whilst they were watching the 'babe'-packed TV programme *Charlie's Angels*, and asked them to rate the attractiveness of a picture of an average female student. For comparison, he did the same with students watching largely 'babe'-free shows, like the news.

He found that the men watching *Charlie's Angels* gave the average female student a lower score than the news-watchers. In further experiments, he showed slides to three groups of male students, respectively of *Playboy* centrefolds, averagely-attractive women and abstract art. Sure enough, the *Playboy* group rated an average-looking woman lower than the others. This effect transferred to real life. After watching the slides, the *Playboy* centrefold-affected group rated their actual girlfriends lowest, not only in terms of attractiveness, but in how much they loved them.

To top it all, Kenrick showed male and female students slides of models and of average people. For both sexes, exposure to models of their own sex resulted in a lowering of mood, whereas seeing stunners of the opposite sex either raised their spirits or had no effect. Many other studies have produced similar results.

WHO BENEFITS?

My question is: whose interests are being served by the changes in society over the last few decades, which are undermining people's confidence, and causing spiralling mental health problems?

Beautiful models are pasted all over magazines, TV shows, adverts and products because they sell things. They suit modern consumerism, even though the manner of their use damages our mental health. The media have thus played an important role in making both men and women dissatisfied with their bodies and their partners. But the media are merely the conduit for the forces behind these phenomena.

Put crudely, consumer capitalism makes money out of the disappointment and depression, the dissatisfaction and rage that are engendered by overheating aspirations and unreal social comparisons. It then encourages us to fill the consequent psychic void with

material goods and drugs of solace (alcohol, illegal drugs, food and nicotine).

It also profits from fostering a spurious individualism by encouraging us to define ourselves through our purchases. Ever more precisely marketed products, and the power of the fashion industry, create a fetishistic concern to have this consumer good rather than that one, even though there is often no significant practical or aesthetic difference.

Advanced capitalism requires continual economic growth, and this is only possible if 'needs' are constantly diversifying to create new markets. The system requires ever more diverse 'needs' so that ever more new products can be devised to meet them. Money can even be made from restoring the chemical imbalance in our brains which results from these overheated ambitions and false identities, by selling pills and therapeutic services to the afflicted.

I am not suggesting there is a conspiracy by top-hat-clad, black-coated bankers and blindly materialistic retailers to make us miserable. Writing of 'advanced capitalism' as if it has volition is to anthropomorphise an abstract entity which has no will of its own – as nonsensical as describing genes as 'selfish'. But it must be acknowledged that the way modern consumer society has developed is very convenient for those who pull the levers – both creating and curing misery, with our inner lives footing the bill.

FIGHTING FAT

'Advanced capitalism' is currently out of fashion as an explanation for our problems, but it is a major contributor to them. There are others, too, of course. The 'communitarian' writer Amitai Etzioni, for example, likes to point to the breakdown of morality and communities as the real cause of our widespread unhappiness. But in itself, this is nowhere near a good enough explanation for the mental health problems we face today.

What, for example, would his argument tell us about the fact that most of our adult lives most of us in developed nations fight a battle against being overweight? This is a wholly new problem in the history of the world, caused in the first instance by the phenomenal success of modern technology in creating diverse and abundant foods.

Unfortunately, like all animals, humans were designed to assume that food is scarce. Consumerism exploits our instinctive tendency to overeat fats and sugars by dressing food products up as 'healthy' or 'nourishing' or 'energy giving' when what most of us need is plenty of roughage and a lot less calories. Having overeaten, we come to hate our shape and to resent our ponderous bodies. Then we can be sold diets and diet products. Alternatively, we may starve ourselves.

Coupled with the relentless images of thin and beautiful models, the net result is an unceasing sense of failure, a losing battle against overweight. That we have beaten one of the most enduring challenges to human life – starvation – has actually become a threat to our mental health.

SEEKING SOLUTIONS

To change the low serotonin society which is causing these problems, something far more radical than a call for a return to the morals of the 1950s is required. If we want to continue to live in an advanced society, we must develop one that works for, rather than against, our mental health. ♦

*Oliver James worked as a clinical psychologist in a mental hospital for six years before becoming a TV producer and journalist. He is the author of *Britain On The Couch – Why We're Unhappier Compared with 1950 Despite Being Richer*, (Arrow, 1998) and *Juvenile Violence in a Winner-Loser Culture*, (Free Association Books, 1995).*

DISTURBING FIGURES

An analysis of four large community surveys by Myrna Weissman in 1993 indicates the percentages of men and women likely to suffer a major depression or suicide attempt during their lifetime:

	Percentage Lifetime Prevalence Depression		Percentage Lifetime Prevalence Attempted Suicide	
	Males	Females	Males	Females
USA	3.5	8	1.7	5
CANADA	7.5	13.2	2	5.3
GERMANY	4.9	17	0.7	3.3
NEW ZEALAND	8.6	17	2.6	6.2

HUNTING DOWN THE FACTS

ROBIN PAGE BELIEVES THAT THE GREEN MOVEMENT SHOULD BE PREPARED TO CONSIDER HUNTING IN A NEW LIGHT.

IT INCREASINGLY SEEMS that, as the environmental pressures on the world become greater, so politicians grasp at ever more irrelevant diversions to distort the real issues. We live in a time when British politicians should be seriously concerned about pollution, deforestation, over-population, the industrialisation of farming under the Common Agricultural Policy, unsustainable housing development, climate change, etc. Instead, which environmental issue is currently exercising the minds of politicians in both Scotland and England? Fox-hunting. Forget the fact that our own quality of life, even our life support system is being threatened. Let's worry about a few men and dogs chasing foxes across muddy fields.

Assuming, though, that this issue is here to stay, we must ask ourselves where, on the question of hunting, should the conservationist, the environmentalist and the green activist stand. Let us first examine the context.

Thanks to the excesses of the Common Agricultural Policy, wildlife on Britain's farmlands is being decimated at an alarming rate. The current agricultural crisis means that the family farm is under immense pressure, and as small farms go out of business they are swallowed up by larger farms. Production is the name of the game, to produce as much as possible as cheaply as possible, which leads to the further intensification and industrialisation of farming. The big losers are landscape, wildlife and biodiversity, which are being laid waste in the name of 'efficiency' and 'productivity'.

The exceptions to this rule are in the areas where hunting, shooting and fishing take place, and I write this as a conservationist who does not hunt, shoot or fish. Where habitat is left for the fox and the pheasant, it also creates a wide range of habitats for other forms of wildlife such as the otter, the barn owl and the bee orchid. For example, I have travelled extensively in the area of the Heythrop Hunt, in the heart of the Cotswolds. It was a total contrast with my area of Cambridgeshire, where the main interest of most landowners is the production of large quantities of wheat and barley.

Cambridgeshire has become a wildlife graveyard, but the hunting country of the Cotswolds is a living and working entity, with wildlife so rich and so diverse that the hunting landscape is the main reason the region has been designated an Environmentally Sensitive Area. It has woodlands, hedgerows and grasslands espe-



WHERE HABITAT IS LEFT FOR THE FOX IT ALSO CREATES A WIDE RANGE OF HABITATS FOR OTHER WILDLIFE

cially for hunting and not only does the fox do well, but there are wildflowers, songbirds and a wealth of butterflies and insects. Around many fields there are 'hunting headlands'. These enable horsemen to ride around the field edges without cutting up the centre. They also have immense advantages for wildlife in the spring and summer. They have become the famous 'grass margins' promoted by the Game Conservancy and my own Countryside Restoration Trust in their work to bring wildlife back to farmland.

A Cotswold hunting headland in summer is a place of marbled white butterflies, skylarks and grazing hares. The fox too benefits from this management. It is both preserved and controlled. Those who believe that there is no need to control foxes are living in a fantasy world. Virtually every conservation body in the land controls foxes to stop predation of a range of birds from terns to avocets to grey partridges.

The irony is that it is the hunters and shooters who are managing the countryside in a practical and conservation-friendly way. They are retaining and managing woodlands, grassland, wetland and hedgerows. As a consequence, serious conservationists should be praising their work. Sadly, myself and David Bellamy are almost the only two who are prepared to put our heads above the parapet of political correctness to say so.

Fox-hunting in many parts of rural Britain has another important function. With farming and rural communities under great economic pressure, hunting provides a great social and community service, binding the community together and providing both social life and companionship. It really is part of a living culture, and without it the lives of many farming villages in the Lake District and the fells would be empty. It makes up a living culture in a society that is becoming ever more colourless and cultureless.

Stag-hunting is a type of hunting that attracts even more vitriol than chasing the fox or the hare. Again, this is strange. The stag is not 'torn to pieces', as popular mythology would have it. It stands at bay and is shot. The conservation implications of stag-hunting are also interesting. If any other country had a red deer herd in such good condition – protected by the local community and regarded as 'community deer' – as that on Exmoor, it would be described as 'sustainable management of a renewable resource'. But Exmoor is in England, where most urbanites have never seen

STEVE CARROLL

TITLE: THEARCHIVE

a wild red deer, and where 57 per cent of the population admit that all their information about hunting is obtained from the media.

The nearest wildlife management system to Exmoor's red deer-hunting is possibly Zimbabwe's 'Campfire' scheme. Chris Huxley, an ecologist working in international wildlife conservation, says of it: 'Campfire's aim was to ensure that local people valued the wildlife in their area. If this is achieved, then there will be a big incentive to conserve. This was approached by firstly relinquishing ownership rights on wildlife to the local communities. Secondly, mechanisms were encouraged to provide financial returns from the wildlife'. The parallel with Exmoor deer-hunting is clear. As things stand, the deer are tolerated by farmers and valued by local people because they bring substantial benefit to them. The West Somerset District Council commissioned report suggested that the deer-hunting generated £5.5mn annually for the local economy. The activity also supports substantial local employment equal to over 400 full-time jobs. Set against this is the fact that the red deer can be a serious agricultural pest.

But let us also consider the question of cruelty more closely, for it is an important one. If we are genuinely concerned about animal cruelty in these islands, there are other elements in the equation that also need to be considered. If cruelty is regarded as an issue, what about the cruelty in halal slaughter – an issue that I have never once heard addressed by animal rights activists. What about the continuing closure of Britain's slaughterhouses; or the 800,000,000 broiler fowl killed in horrific conditions; 240,000,000 vertebrates killed on our roads; 250,000,000 birds and animals killed by domestic cats and 230,000 lambs killed by foxes.

By comparison the 16,000 foxes killed by hounds every year seems quite insignificant. In addition to which, their deaths are the result of something far more natural than speeding cars and constrictive farming methods.

A growing number of scientists believe that not only is hunting 'natural', but that it may even be good for us. Dr Tim Coulson, a Research Fellow of the Zoological Society of London, says:

'Man has hunted wild animals for millennia. Evidence for this comes from archaeologists who have unearthed the bones of hunted animals alongside spears, arrowheads and other ancient human artefacts at sites from six continents. The archaeological evidence is also supported by man's physiology. Our saliva, teeth and the enzymes in our intestines are all adapted to aid the consumption and digestion of meat... I, for one, would be surprised if such behaviour does not have some genetic base.'

Whether or not hunting has a 'genetic base', it is clearly an activity that humanity has grown up with. Even the most committed anti-hunting vegan must be able to see how hunting helped us to survive for many thousands of generations. Consequently, it could be said that those people who condemn hunting are also condemning nature and condemning their own past. In his fascinating autobiography 'Green was the Earth on the Seventh Day', Thor Heyerdahl, the famous explorer and anthropologist, wrote: 'If God had created nature, we ought to respect it. And if there was no God, then nature was the creator of man, and there was even more reason to respect it'. Hunting is part of nature and examples of it abound from the song thrush killing a snail to a spider catching a fly and a lion stalking an antelope on the plains of the Serengeti.

Part of today's problem is that, in the urbanisation that passes for civilisation, large numbers of people have become separated from nature; they have lost touch with the realities that helped us to survive. They cannot imagine a world without soya milk, bean sprouts and instant coffee, and seem unable to appreciate that their brave new world is recent, superficial and unsustainable.

Stephan Budiansky wrote, in *The Covenant of the Wild*: 'For two million years we were hunters; for ten thousand years we were farmers; for the last one hundred years we have been trying to deny it all'. Some believe that the great denial has only occurred in the last 50 years, but as society moves further away from the land, the seasons and nature, so the chorus of denial grows louder. It is based on a mixture of health food fetishes, agricultural fantasies and a muddled animal rights philosophy.

In the heart of Africa, where our first ancestors probably originated, there was not a constant supply of fruit and nuts. Dry seasons and wet seasons meant that food came and went. Before the advent of fire, it also meant that much vegetation was not palatable to the human digestive system. When man moved on, searching for pastures new, or when climate change brought prolonged cold, then hunting was the only activity that made survival possible.

Man was a hunter-gatherer, and when climate made gathering impossible, hunting was the only way to provide the meat and skins that ensured food, warmth and survival.

To hunt requires many skills and conditions. Those who describe hunting as uncivilised are simply showing that they do not understand how the civilising process began. Early hunting demanded cooperation and communication; it helped develop language; it involved craftsmanship with the manufacture of weapons; art was used to add ornate decorations to them, and paints were used to depict the quarry; celebrations at the end of a hunt helped to develop a culture involving stories, music and dance.

Those who hunt today are doing so in a sophisticated form, but the thread linking them with the past is a civilising one, a fact that men in suits, without roots and without culture simply do not

understand. The desire to hunt is good, normal and natural.

So as a conservationist, and somebody desperately worried about the declining welfare standards in European meat production, I believe that hunting is acceptable in the 21st century. It is humane and it is natural. The Hunting Gene is a green gene.

Signed copies of The Hunting Gene can be obtained from Birds Farm Books, Barton, Cambs, CB3 7AG, at £25 (+ £3 p&p). General copies from Merlin Unwin Books, telephone +44 (0)1584 877 456.

HUNTING WITH HOUNDS has been a source of controversy for decades in Britain. The debate, though never before aired in *The Ecologist*, has usually been heavily polarised. But supporters and opponents of hunting have often been those with little if any experience in the countryside. As a result, what is without doubt a legitimate debate within the environmental movement has been pushed to one side. The author, a farmer who neither shoots nor hunts, explains here why in his view hunting is good for the countryside. We anticipate a lively debate, and encourage you to submit your own views on the subject.

THE POWER OF LONDON

THE CORPORATISATION OF LONDON IS, SAYS MALCOLM MCLAREN, AMONG THE BIGGEST THREATS FACING THE CAPITAL AND ITS CULTURE

THE MAYOR OF London should in my view be genuinely independent, and preferably not a politician at all. Only an independent can fearlessly stand up for London. Politicians seem to have little real knowledge of business and culture, the twin motors of a modern city. Politicians always have hidden careerist agendas, and are versed in the language of deceit. Politicians themselves are becoming rapidly outdated, with their 'karaoke' language (they speak the words of others and take no responsibility once the performance is over). I would be perfectly happy were London's congestion to be eased by sending government up to Newcastle which is depressed and in need of work.

By standing as a mayoral candidate I wanted to act as a voice of dissent against the corporatisation of the city I love. It seems that soon we will all be online and the corporations will be able to track us from birth to death. Already every keystroke of workers in call-centres, the new dark satanic mills, is monitored, every call is timed to the second and scripted. Brainscanning technology is increasing apace and corporations will soon be able to tell which of their employees are feeling horny, disruptive, religious or angry. Even our sex lives will, according to apparently quite sane futurologists, be mostly virtual, and already the most used sites on the Web are those offering cybersex. Corporatisation is spreading to every aspect of our lives. In the centre of London where I live, the button-makers, the tailors, the florists are all being edged out daily by the chains like Starbucks.

Our scientists are being sold off and told what to research and think by the corporations. Scientists are becoming more concerned with their share options than sharing knowledge. And inevitably, hung behind the chairman's desk or distracting you as you sip your cappuccino, there is some lofty bullshit mission statement, attempting to tell you what to think as they fleece you.

London has one of the greatest collections of innovative thinkers anywhere, we also have the world's largest financial centre, but the relationship between creativity and business has become increasingly dysfunctional. The City used to have a tradition of supporting the artisans through the Guilds and Liveries – such a system needs to be updated.

Music and fashion, the areas I have worked in, are other areas being corporatised. Fortunately, London still has a street culture producing new music variants such as drum and bass in Hackney to new Asian music, and new DIY looks on the street. But the music



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business is run more and more by the accountants and marketeers dreaming of vertical integration, product and the bottom line rather than being thrilled by music or nurturing careers. Their ideal music group is a virtual one which is not going to answer back.

Politics itself is another area where the corporations are taking over. Take a simple issue of night flights over London, which keeps thousands awake at night. Most of these planes are British Airways flights, whose corporate lobbyists have a cosy financially rewarding relationship with government. Why is it that the Dome features a McDonald's as the first thing you see in its entrance rather than a Farmers' Market selling organic produce? As the song says – follow the money.

I'm not against either business or technology, both are a necessary, vital and potentially liberating part of the life of a modern city. What I haven't found in the politicians is any deep understanding of business or culture let alone any true passion for the history of London or any developed sense of aesthetics. London will be remembered for what it makes, for its artists and artisans more than its bankers or corporate drones. Financially the corporate takeover of London is short-sighted – a green, vibrant city will act as a beacon to the world's business and tourists. Not to mention a less stressful place, conducive to contemplation and creation for its citizens. In all modern cities, daydreaming is becoming a subversive activity. As for the authentic amateurs in art and love who understand that failure can be a noble pursuit – they are no longer required on location.

The choice seems to be between a Zero Tolerance theme park London where those who have fallen off the ladder of success are swept under the carpet or an authentic, organic London. Pornography and Theme Parks are clean, as glossy as a perfect supermarket apple that tastes of nothing. Real life, sex and birth are messy, chaotic and creative.

But an organic revolution is under way – and even though I will not be elected mayor, I have aimed some darts like the archers of Agincourt against those who would drain the life of London. A city of Dickens, Wilde and Blake, a haven for dissidents throughout the centuries, a city whose name still haunts the imagination of the entire planet.

Malcolm McLaren campaigned for the role of Mayor of London this year.

WHEN THE FIGHT IS RIGHT

CAN CHANGE BE BROUGHT ABOUT WITHOUT VIOLENCE? MOST DEFINITELY SO, SAYS CHARLES SECRETT, WHO HERE SHOWS HOW.

HOW SHOULD COMPANIES and investors be persuaded to develop environmentally sound and ethical policies and practices? Consider the following...

Passionate animal rights activists target City fund managers, who have invested in Huntingdon Life Sciences, Europe's largest contract research laboratory, with repeated bomb threats, warning them to withdraw or else. They do, and the shares plummet. The threats turn out to be a coordinated hoax. Justifiable direct action, or not?

Thousands of committed demonstrators march through the City of London, demanding that corporations and institutional investors curb capitalism's worst environmental and human excesses. Anger erupts, offices are trashed, the gathered police storm the protestors, and a riot ensues. The street battle gets worldwide publicity for the cause. Justifiable direct action, or not?

Brave campaigners occupy beautiful wildlife sites along imminent road routes, tunnelling deep before the bulldozers move in. Spending weeks underground, or camped high in the trees, these peaceful protestors only delay the inevitable building. But their stand helps unite communities, voters and public opinion against government policy and construction company practice. Some sites are lost, but companies and government rethink their approach to concreting over protected areas. Justifiable direct action, or not?

My answers on a postcard are: No; No; Yes.

Governments and corporations cannot be trusted to exercise environmental protection and social justice responsibilities. The world is hurting, because most politicians and captains of industry are more interested in ideology and money than doing what is right. Those positions cannot go unchallenged. Environmental and social justice campaigners must continually make judgements about what is justifiable, effective opposition, and what is not.

In a democratic political economy, where the market is regulated, there are no circumstances where violent activism, or the threat of it, is justified or effective. In addition to the obvious fact that in a democracy violence is wrong, there are three reasons why.

First, violence is tyranny. The violence of one person against another is the dictatorship of the individual, which, escalating, breeds a similar response from the State. As extremists target people, or their property with the threat of collateral damage to innocents, so government will act to safeguard the rights of those engaged in lawful pursuits. It may be ethically objectionable to vivisect animals, or pursue profits at the expense of nature and community, but it is usually legal. Confronted by violent protest,



VIOLENCE SIMPLY
BRINGS FORTH
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AND POLICING

or circumstances where violence erupts, the State introduces more restrictive laws and tougher policing. Democracy narrows, and the rights of the active, aware citizen are curtailed.

Second, two wrongs do not make a right. What reasonable being, professing to defend life, can justify maiming for the cause – and still claim the moral high ground or their own democratic rights? It takes tremendous powers of self-delusion to hold simultaneously such mutually contradictory positions. Think on how such animal activists have been jailed for very long terms. Their martyrdom is noticed by the very few, and the objectionable behaviour of companies continues. Violent protest is self-defeating.

Third, you don't need violence to win. The beauty of living in a democracy, where companies are regulated, media are interested and citizens educated, is that tools for peaceful change are available. Companies do not make products that consumers ignore. No company continues with its practices if bad publicity occurs, or prohibitive laws or tax regimes are enacted, or shareholders sell up, or investors say stop. See what happened to Monsanto.

In a democracy, it is the people who have the power to determine what goes on. The initial challenge is to get the right information to the right people in the right way at the right time, so that they become aware of what goes on. Information is the first step to exercising power. The second is to act upon it effectively. That means creating campaign opportunities for citizens to use their knowledge to shape what happens next. The third step is to channel that peaceful activism on company and government decision-makers, so that transformation occurs.

It works. In the past four years, Friends of the Earth has persuaded governments to pass over a dozen laws and regulations, which we first drafted. For the WTO's Seattle meeting, we were at the centre of building the coalition of 1,700 citizen organisations worldwide who opposed further negotiations without fundamental reform. We will use the same methods to help transform the City, so that ethical investments become the norm. Critically, we will target the pension funds and their managers who ultimately control what goes on – not with bombs, but with good information about problems, solutions and profits, and by organising and mobilising enough volunteer citizens who cannot be ignored.

In our view, that is how to effectively turn wrongs into rights – and ensure democracy grows stronger not weaker by doing so.

Charles Secrett is director of Friends of the Earth.

STEVE CARROLL



Doctor's Handwriting

A monthly column that helps you decipher the medical truth.

BY LYNNE McTAGGART

THE MEANING BEHIND MENINGITIS

Last November, the UK Department of Health (DoH) jubilantly announced an all-out attack against the group C strain of meningococcal meningitis. Not only was Britain the first country to release a new vaccine against the C strain, but it was also the first to embark on a mass vaccination campaign, with an ambitious plan to inoculate all the nation's 14 million children within a year.

No doubt the Government was genuinely well-intentioned in its desire to staunch what the public regards as a haemorrhage of childhood meningitis cases. Nevertheless, in the process, the Government has forged an inappropriate alliance with a drug company, leapfrogged over the usual approval process for releasing a new drug and allowed all the country's children to be exploited as a giant, convenient pool of guinea pigs.

The new meningitis vaccine, called Meningitec, is meant to replace an existing combined meningitis A and C vaccine, which is unreliable and short-lived. Wyeth, the pharmaceutical giant, created this 'conjugated' version, which would marry the old strain C vaccine with a diphtheria toxin, a veteran vaccine component, supposedly to kick-start the body's response to the meningitis C portion of the jab. Tests thus far have shown that the conjugate version seems to produce immunological 'memory' cells. Several years ago, the DoH and its government sidekick, the Public Health Laboratory Service (PHLS), which formulates immunisation policy, approached Wyeth and other vaccine companies, asking them to step up research into a meningitis C vaccine.

When Wyeth got to the finish line first with a product, the PHLS took over its testing. 'Rather than our company having to set up trials, the PHLS did much of the studies for us,' says David Hall of Wyeth. With the help of the PHLS, Wyeth was able to fast-track this drug through the usual drug-approval procedure, which ordinarily requires a drug company to set up its own trials, with the Government acting as an independent judge, approving the drug on the basis of the safety and effectiveness tests conducted. In this instance, defendant, prosecution, judge and jury were all effectively on the same side.

By working with the PHLS, Wyeth ensured not only that its studies had the most positive spin possible, but also that the product would be given a blessing to be test-marketed on a mass basis through a new PHLS surveillance system. In effect, the Government is carrying out the best post-market testing that Wyeth could ever have dreamed of. Having a commercial entity get in bed with the Government might have been excusable if we were talking about an epidemic. Although meningitis is terrible in its rapid onset, the fact is that it is not a major killer of children, and it is only media coverage, rather than the actual prevalence of the disease, which accounts for its high profile.

According to the Department of Health's own fact sheet, meningitis C kills about 40 children a year and virtually no one between the ages of 5 and 15. While no one would want to minimise the loss of individual children, in sheer epidemiological terms the incidence is small potatoes, compared even to more arcane causes of child death. For instance, your baby is five times more likely to drown in his bathtub than die of meningitis C, and 86 times more likely to die of cot death. Your child is 32 times more likely to die in a car than from meningitis C, and six times more likely to get knocked over by someone else's vehicle.

A countrywide vaccination campaign of this magnitude might be justified if the Government could guarantee that the vaccine was completely safe. However, no one can make such a claim about a vaccine that is brand new. The new meningitis C vaccine was tested on groups of people and children for, at most, a few weeks – too short a time for any real problems to surface. Even so, we know that in a

PHLS study of infants, one-fifth of all jabs given made babies systemically ill. Reports have also linked one form of the meningitis C vaccine with post-vaccinal encephalomyelitis (commonly known as 'ADEM'), which causes lesions on the myelin sheath of the nervous system. Whether ADEM becomes a new condition in children once the meningitis C vaccine is widely disseminated is anyone's guess.

The only certainty is that we won't know the long-term reactions to this vaccine until virtually every child in Britain has been given the jab. The history of vaccination is littered with casualties when governments have rushed headlong into vaccination campaigns with an untested product. In 1999, a year after the US launched a new vaccine for

rotavirus, the disease which causes serious dehydrating diarrhoea in babies, Wyeth Lederle Vaccines was forced to withdraw RotaShield from the market, when a link was discovered between the new vaccine and the development of bowel intussusception, or bowel collapse, in infants. Some 29 babies required surgery and seven had bowel resections. One infant died. This for a disease which kills at most 20 American babies a year.

In its desire to be regarded as responsive and heroic, the Department of Health is rashly attempting wholesale herd immunity with an untested and potentially dangerous product for a disease with very small numbers of casualties, rather than carefully testing it on a small population before releasing it to the public at large. Experimenting on children is no way to be a hero.

Lynne McTaggart is editor of *What Doctors Don't Tell You*, a monthly newsletter which exposes dangers and unproven practices in modern medicine. Annual subscriptions: £34.95. For details: Satellite House, 2 Salisbury Road, London SW19 4EZ or tel: 0181 944 9555.

We won't know the long-term reactions until virtually every British child has been given the jab

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ONE GREAT BIG HILL OF BEANS

SUE BRANFORD AND NICOLE FRERIS REPORT FROM BRAZIL ON THE LATEST THREAT TO THE AMAZON RAINFOREST – SOYA CULTIVATION

SOYA – USED MAINLY to produce animal feed for the world's growing legion of industrial meat consumers – is the most important commodity on the world agricultural market. But it requires vast amounts of land for cultivation. Now, soya farmers are moving rapidly into the Amazon basin, replacing its rainforests with soya monocultures.

ANTONIO CARLOS QUEIROZ, the president of the Brazilian subsidiary of Monsanto, could scarcely contain his excitement. It was 1998, and he was envisaging the possibilities of genetically modified soya expansion in the Amazon. Pointing out that at least 100 million hectares of land (an area twice the size of France) were available to soya farmers, he noted, 'Today only about 10 per cent of this area is actually in production. We think Brazil has the largest agricultural potential in the world. We predict that, with our Roundup products, we will within three years control 50 per cent of the (Brazilian soyabean) market'.

But Monsanto received an unexpected setback in June 1999, when the courts ruled Roundup products illegal. And resistance to GM crops has been growing in Brazil. The big soyabean farmers in Mato Grosso, have come out strongly against GM soya, and have accused the multinationals of trying to dominate the market.

This, on the face of it, could sound like a resounding victory for the Brazilian environment. Farmers will now be able to grow their own soya without fear of GM incursions. Good news all round?

No. Because of soya, the Amazon basin is facing possibly its most serious threat ever. Brazilian soyabean farmers selling their crop on the world market are moving in, quietly but very rapidly, from the south.

These farmers have already devastated much of the savannah and transitional rainforest of Mato Grosso in southern Amazonia, transforming the landscape into a green sea of soyabeans. Only the demarcated indigenous lands have escaped destruction, becoming small islands of intact forest surrounded by monotonous green monoculture.

This destruction is set to continue, for it is driven by the world's apparently insatiable appetite for meat. Soyabeans are used to produce soyameal, the most com-

monly used protein source in animal feed. And Brazil, in its rush to expand soyabean production, is extending its agricultural frontier yet deeper into the Amazon basin. Soyabean plantations are spreading from Mato Grosso into the states of Amazonas, Rondônia, Acre, Roraima, Maranhão and Tocantins.

The Brazilian authorities are making promises that this massive extension of soya cultivation will not destroy the forests. Soyabean cultivation, they say, will not be permitted in areas of tropical forest, only on degraded pastureland and in areas of natural savannah within the forest. Yet even if this rule is respected, which many doubt, the soya farmers are themselves driving the cycle of destruction: they buy land from peasant farmers and cattle-rearers, responsible for the original devastation of the forest, who then move on to open up new areas of even remoter forest.

And the Amazon rainforest is disappearing as fast as it ever was. According to data from satellite images, about 16,838 square kilometres of Amazon forest were destroyed in 1998, up on the 13,227 square kilometres devastated in 1997. From reports of smoke drifting over the Amazon basin during last year's burning season, the pace has not slackened.

THE ECONOMICS OF SOYA

Compared to cattle-rearing and peasant farming, soya farming belongs to another economic league. Virtually unknown in Europe until after the Second World War, soya is now the most important agricultural commodity traded on the world market. This is the result of changes in food consumption patterns. In the 1970s, meat consumption soared in industrialised countries in response to improved material living standards. Farmers in Europe built up large cattle herds and boosted poultry production through new management techniques such as battery farms.

But they faced one serious problem: a shortage of fodder. Lacking land for pasture, they looked abroad for their supplies. Thus soyabeans were introduced to the Third World, with a particular focus on South America, as a new miracle export crop.

From the point of view of European livestock farmers, soya is the ideal product. It is cheap. There is no waste: a full 100 per cent of the product is used in the production of bran (for animals) and oil (for human consumption). It produces good quality fodder: soyameal has a high protein content and a low fat content, so it promotes weight gain in cattle and egg-laying in poultry. And soya has another largely hidden advantage for European countries: it enables them to occupy a much larger environmental 'footprint' than justified by their relatively small geographical areas.

For the military government in power in Brazil in the 1970s, soya also made sense. It was the perfect product for increasing export earnings to help service the snowballing foreign debt. Its cultivation began in the traditional farming areas of Rio Grande do Sul and Paraná in the south of the country. However, by the 1980s, there was little new land left in this region, so the government encouraged farmers to expand into the abundant savannah of central Brazil and – now – on into the Amazon.

The Brazilian 'soya boom' has been artificially sustained by massive state and foreign subsidies. The Brazilian government has funded research, supplied financial incentives and tax exemptions to the farmers, built roads, railways and waterways, and subsidised the supply of agrochemicals. Through its development programmes for Mato Grosso (Prodeagro) and Rondônia (Planaflora), the World Bank has also encouraged farmers to switch to soya, while doing little to protect the ecosystems being destroyed by the plantations. And Japan, keen to create a strategic counterbalance to US dominance in the global soya industry, has been financing soya farming in the states of Mato Grosso and Tocantins, and is now investing in expansion into the state of Amazonas.

With an output of 31mn tonnes, Brazil is the world's second-largest soya producer after the United States, and soya beans, meal and oil are its chief export products. And even faster expansion is planned: the government has set a target of 100mn tonnes by the 2002/3 harvest. This means

that the land under soya cultivation will have to increase from today's 13mn hectares to 39mn hectares. Such huge spaces can only be found in the Amazon basin.

And yet the soya boom has done nothing to satisfy the real development needs of the Brazilian people. Millions of small farmers and rural labourers have been forced off the land to make way for soyabean plantations which employ an average of only 1.7 workers every hectare, compared to 30 per hectare for a family farm. It is a cruel paradox: Brazil is one of the world's leading agricultural exporters, but approximately 60 per cent of its population suffers from malnutrition.

THE SOYA KINGS

On the front line of the expanding soya frontier is an elite of extremely powerful Brazilian families, closely allied with local politicians. Their leader is Andre Maggi who in just 15 years has become the largest soya producer in the world. Now in his seventies,



STILL PICTURES

Maggi came originally from Rio Grande do Sul. In 1984 he visited the region of Chapada dos Parecis in the north of Mato Grosso, then a remote area inhabited by the Paresi Indians. He set about buying up land, which was extremely cheap at the time. Unlike the few peasant families living there,

he came with a modern mentality: to set up industrial agriculture, with state-of-the-art machinery and chemical inputs. Maggi founded a new town, Sapezal, and was elected its first mayor in 1996.

Today Andre Maggi's health is failing and his son, Blairo Maggi, is taking over. Already a senator, he is expected to run for the governorship of the state of Mato Grosso in 2002. If elected, he will consolidate the hold of the soya kings over their empire.

Until recently, soyabeans from Mato Grosso had to travel 2,500km by road to the ports of Santos and Paranagua in the south of the country and then back north, by ship, across the Atlantic, to Europe and Japan. The costs were absurdly high – US\$105 for taking each tonne of soyabeans from Mato Grosso to Rotterdam. With government support, the farmers decided that a system was needed to transport the beans north through the Amazon estuary.

The first step was the construction of the Madeira-Amazonas waterway, completed in 1997. Soyabeans are now taken by road to Porto Velho, where they are put on to barges and transported down the Madeira river to a newly constructed granary terminal at Itacoatiara. There the beans are transferred to bulk carriers, which take them out along the Amazon river. This new route has reduced transport costs by a significant 28 per cent. When he opened the waterway, President Fernando Henrique Cardoso said: 'This project will produce a new cycle of development for the region. From now on, Amazonia has to develop its agriculture and send its crops all over the world'. Last year 700,000 tonnes of soyabeans were exported via Itacoatiara. And multinational companies have been quick to shift their infrastructure north. Two of the largest trading companies in the world, Cargill and ADM, are investing heavily in the modernisation of port facilities at Santarem on the Amazon river. Further projects are in the

pipeline. They include the asphalt-ing of roads and the construction of waterways along two other mighty river systems. The latter would run beside – and on occasion cross – the lands of some of Brazil's most isolated indigenous groups. In 1999 they issued a joint protest in which they stated: 'This project involves the production

of soyabeans and other crops that will be sent to feed pigs, chickens and cattle in other countries... Is the life of these animals in other countries more important than our rivers, our lives and the lives of the fishing communities?'

The project has been temporarily halted by a court action that has been brought by the Indians.

FOREST TO DESERT?

Clearly, with the proliferation of loggers, cattle farmers, dams, roads and oil exploration, soya is not the only threat to the Amazon basin, but it is one of the most lethal. Soya plantations are highly mechanised and depend on the use of a staggering quantity of agrochemicals. First, the forest is clear-cut and burnt, and the soil tilled and treated with large quantities of lime to correct its natural acidity. The area is then sprayed with insecticide, fungicide and herbicide, after which the soyabeans are mechanically planted. As the beans grow, they receive two further treatments with herbicides. A final dousing is undertaken to cause uniform drying of the beans, facilitating mechanical harvesting.

Evidence and intuition suggest that this sort of farming has a devastating impact on the environment. Harvests in Mato Grosso are already beginning to decline, as the soil loses its nutrients and crops become increasingly vulnerable to disease. The fragile soils in the Amazon basin will give up the ghost even sooner. The headwaters of Brazil's largest river systems – the Amazon and the Paraná-Paraguay – lie deep within Mato Grosso's soyabean plantations. Studies show that agrochemicals are seeping into these river basins, causing the loss of fish species.

As leaders of the fight against genetically modified foods, Maggi and the Brazilian soyabean farmers are in danger of being erroneously cast by environmental groups as the good guys, who are attempting to stand up to nasty multinationals.

But the reality is more complex. If European consumers say no to GM soya products, while continuing to support a meat industry dependent on soya imports, there will be a growing market for Brazil's GM-free soyabeans. And this will provide the economic incentive to push the soya frontier further into the Amazon basin.

Sue Branford is a writer and broadcaster. She is writing a book on Brazil's landless movement, the Sem Terra. Nicole Freris is a medical doctor working with indigenous peoples in the Brazilian Amazon.

COURT IN THE ACT

JOSEPH MENDELSON EXPLAINS WHY HIS ORGANISATION, THE CENTRE FOR FOOD SAFETY, FILED A LAWSUIT TO REFORM AMERICAN FDA POLICY

IN SUPPORT OF *the American public, the Centre for Food Safety has filed an action against the US Food and Drug Administration's pre-market safety-testing and labelling policy on GM foods.*

BEGINNING IN THE mid-1980s the United States Food and Drug Administration (FDA) began considering how it would review new varieties of foods developed through genetic engineering. Among the issues that needed review were the environmental, food safety and ethical issues surrounding these novel foods. On 29 May 1992, the FDA concluded its review and issued a policy for foods derived from new plant varieties. The policy determined that all transferred genetic material and the resulting food products derived from genetically engineered plant varieties were akin to traditionally bred plants and, bar a few, considered 'generally recognised as safe'.

As a result of the 1992 Food Policy, and the subsequent federal action, genetically engineered foods and ingredients were allowed into the United States marketplace without labelling, without proper analysis of the potential safety risks associated with their genetic instability and without full study of their environmental impacts.

Recently, on 13 December 1999, the FDA held the last of three public hearings to reassure the public that it was being appropriately vigilant on the issue of genetically engineered foods. However, the hearings came over seven years after the US government deregulated genetically engineered foods from virtually any government oversight. For most, the FDA's effort to assuage mounting opposition to GE foods held little validity.

Each day, tens of millions of US infants, children and adults eat genetically engineered foods without their knowledge. A significant percentage of processed foods purchased today contain some genetically engineered (GE) food products. Yet, US consumers have no way of knowing what foods are genetically engineered because the FDA does not require labelling of these products. What's worse, the agency also does not require any pre-market safety testing of GE foods. Companies do not even have to inform the FDA that they are marketing GE foods.

Despite the attempts to put a friendly face on this government negligence, opinion polls consistently show that more than 90 per cent of Americans strongly support the labelling of genetically engineered foods. A 1999 *Time* magazine poll revealed that close to 60 per cent would avoid such foods if they were labelled.

The FDA's inaction on this issue also compelled our organisation, the Centre for Food Safety, and numerous other plaintiffs, including leading scientists, religious leaders and consumers, to file a lawsuit to reform FDA policy on GE foods by seeking to obtain stronger safety testing and mandatory labelling. The action was filed in the US District Court for the District of Columbia on 27 May 1998. Consistent with the public's comments, the legal case seeks to mandate that the FDA takes the following actions:

- The FDA treats all genetic changes to foods caused by genetic engineering techniques as food additives, thus triggering the FDA's need for specific pre-market safety testing and approval of each genetically engineered food before it could be considered 'generally recognised as safe';
- The FDA performs a thorough environmental review of all genetically engineered foods made commercially available as established by a law known as the National Environmental Policy Act; and
- The FDA mandates the labelling of all genetically engineered foods because of the 'material' changes in such foods.



CARTE BLANCHE

In response to a lawsuit, the FDA has admitted in court that it has made no regulations, 'no binding norms', and 'no dispositive scientific findings', whatsoever,

about genetically engineered foods. In other words, the FDA has given the biotech industry carte blanche to produce and market any number of genetically engineered foods without any mandatory agency oversight or safety testing.

The FDA's failure to require safety testing of GE foods is not only grossly negligent, but also poses a very real potential public health threat. A significant body of scientific evidence, including findings of the FDA's own scientists, shows that the genetic engineering of foods can transform safe foods into dangerous products. Much of the scientific support for documenting these health hazards has come from the 44,000 pages of discovery provided to the Centre for Food Safety as part of the suit.

In 1992 the FDA ruled, without any scientific basis, that genetically engineered foods present no different risks than traditional foods. The FDA's own scientists ridiculed the agency's policy. 'What happened to the scientific elements in [the] document?' one asked. FDA scientists consistently stated that '[t]here is a profound difference between the types of unexpected effects from traditional breeding and genetic engineering... [T]his difference should be and is not addressed'. The lawsuit seeks to require that the 'unexpected effects' and health risks posed by genetic engineering are addressed prior to any such food coming on to the market. These risks include increases in food toxicity, the presence of new allergens, the creation of antibiotic resistance, immuno-suppression, and the nutritional degradation of foods.

Genetically engineered foods are inherently unstable. Each insertion of a novel gene, and the accompanying 'cassette' of promoters, antibiotic marker systems, and vectors, is random. GE food producers simply do not know where their genetic 'cassette' is being inserted in the food, nor do they know enough about the genetic/chemical makeup of foods to establish a 'safe' place for such insertions. As a result, each gene insertion into a food amounts to playing food safety 'roulette', with the companies hoping that the new genetic material does not destabilise a safe food and make it hazardous. Each genetic insertion creates the added possibility that

formerly non-toxic elements in the food could become toxic.

The FDA was well aware of the 'genetic instability' problem prior to establishing their no-testing policy. FDA scientists warned that this problem could create dangerous toxins in food and was a significant health risk. The scientists specifically warned that the genetic engineering of foods could result in 'increased levels of known naturally occurring toxicants, appearance of new, not previously identified toxicants, increased capability of concentrating toxic substances from the environment (eg pesticides or heavy metals).' These same scientists recommended that long-term toxicological tests be required prior to the marketing of GE foods. FDA's response to the potential toxicity problem with genetically engineered foods was to ignore it. The agency refused to require pre-market toxicological testing for GE foods or any toxicity monitoring, at all.



ALLERGIC REACTIONS

Additionally, in the United States, about a quarter of the population reports some adverse reaction to food. At least 8 per cent of children have physically identifiable allergic reactions to food. The genetic engineering of food creates two separate and serious health risks involving allergenicity. The first is that genetic engineering can transfer allergens from foods to which people know they are allergic, to foods that they think are safe. This risk is not simply hypothetical. A recent study by the *New England Journal of Medicine* showed that when a gene from a Brazil nut was engineered into soyabeans, people allergic to nuts had serious reactions to the engineered product. At least one food, a Pioneer Hi-Bred International soyabean, was abandoned because of this problem.

There is yet another allergy risk associated with GE foods. These foods could be creating thousands of different and new allergic responses. Each genetic 'cassette' being engineered into foods contains numbers of novel proteins (in the form of altered genes, bacteria, viruses, promoters,

marker systems, and vectors) which have never been part of the human diet. Each of these numerous novel proteins could create an allergic response in some consumers. The FDA was also well aware of this new and potentially massive allergenicity problem. The agency's scientists repeatedly warned that genetic engineering could 'produce a new protein allergen.' Once again the agency's own scientists urged long-term testing. However, the FDA again ignored its own scientists.

Another hidden risk of GE foods that the lawsuit seeks to address is that they could make disease-causing bacteria resistant to current antibiotics, resulting in a significant increase in the spread of infections and diseases in the human population. Virtually all genetically engineered foods contain 'antibiotic resistance markers' which help the producers identify whether the new genetic material has actually been transferred into the host food. FDA's large-scale introduction of these antibiotic marker genes into the food supply could render important antibiotics useless in fighting human diseases. For example, a genetically engineered maize plant from Novartis includes an ampicillin-resistance gene. Ampicillin is a valuable antibiotic used to treat a variety of infections in people and animals. A number of European countries, including Britain, have refused to permit the Novartis Bt corn to be grown, due to health concerns that the ampicillin resistance gene could move from the corn into bacteria in the food chain, making ampicillin far less effective in fighting a wide range of bacterial infections.

For the past seven years, FDA officials have ignored their own scientists' concerns over the antibiotic resistance who warned, 'IT WOULD BE A SERIOUS HEALTH HAZARD TO INTRODUCE A GENE THAT CODES FOR ANTIBIOTIC RESISTANCE INTO THE NORMAL FLORA OF THE GENERAL POPULATION.' During the same time, medical professionals around the world have become increasingly alarmed at how GE foods are leading to a massive infusion of antibiotic genes into the human diet. Just this year, for example, the British Medical Association (BMA) addressed this problem in its study of GE foods. The BMA's conclusion was unequivocal: 'There should be a ban on the use of antibiotic resistance maker genes in GM food, as the risk to human health from antibiotic resistance developing in micro-organisms is one of the major public health threats that will be faced in the 21st century.'

Finally, genetic engineering can also alter the nutritional value of food. The genetic instability of these foods can be a major culprit in reducing their nutrients. In 1992, the FDA's Divisions of Food Chemistry & Technology and Food Contaminants Chemistry examined the problem of nutrient loss in GE foods. The scientists involved specifically warned the agency that the genetic engineering of foods could result in 'undesirable alteration in the level of nutrients' of such foods. They further noted that these nutritional changes 'may escape breeders' attention unless genetically engineered plants are evaluated specifically for these changes'. Once again, the FDA ignored findings by their own scientists and never subjected the foods to mandatory government testing of any sort.

In sum, while much of the current controversy over genetically engineered food surrounds the important issue of labelling, the issue is only part of the lawsuit. The Centre for Food Safety's legal action seeks to document the US government's repeated failure to provide its citizens with the proper food safety oversight required by law and to force the FDA to remove all genetically engineered foods from the market until long-term tests have determined that such foods are safe for human consumption (including the risks enumerated above) and the environment. Only after proper testing is done, and the foods are found safe, should they be allowed to be sold. At that time we believe that US law requires that such foods be labelled so those who want to take a precautionary stance, those with allergies, and those with ethical or religious objections may choose to avoid GE foods.

While the US public awaits the ruling, the Centre for Food Safety has also acted to pre-empt rumoured steps by the FDA to make marginal and trivial changes to its 1992 Food Policy. In early March 2000, CFS coordinated the filing of a legal petition to the FDA, endorsed by over 50 other organisations seeking the withdrawal of GE foods from the market until the FDA establishes a pre-market safety testing and environmental framework and mandates labelling.

Joseph Mendelson is legal director at the Centre for Food Safety, Washington, US www.centerforfoodsafety.org The public can comment in support of the FDA petition directly by visiting www.foodsafetynow.org OR by writing to Commissioner Jane Henney, Docket No. 00P-1211/CP1, FDA Dockets Management Branch, HFA-305, 5630 Fishers Lane, Room 1061, Rockville, MD 20852 USA.

TERMINATOR TOO

MONSANTO'S REJECTION OF 'TERMINATOR' TECHNOLOGY WAS A FALSE DAWN, EXPLAINS HUGH WARWICK.



BIOTECH COMPANIES

STILL see sterile seed technology as a way of controlling farmers. Now, just as in the film 'Terminator 2', new technologies are replacing the notorious 'Terminator'. If nothing is done, most of the world's commercial farmland could be using these 'Traitor' seeds, within ten years.

THE MOST SIGNIFICANT

trait a seed possesses is its fertility. It is the fundamental link between farmer and land. So when it was discovered that biotech companies were attempting to destroy

this link, there was understandable anger. 'Terminator' technology had arrived.

This ability to genetically engineer sterility into the second generation of a seed rang alarms around the world. The technology stood to affect the livelihoods of 1.4 billion people who rely on farm-saved seed and community plant breeding.

The intention of the industry was obvious. They wanted to protect their investment – and ensure that seed was bought year on year. The patent for Terminator technology is jointly owned by the Delta & Pine Land company (D&PL) and the US Department of Agriculture (USDA). Monsanto had been courting D&PL for some time, with a view to getting access to it, which provided more ammunition for the campaign against one of the world's least favourite corporations.

So the news late last year that Monsanto had terminated its involvement with Terminator was greeted with celebration by many. But such celebrations were premature. For the reality is that there are still many companies working on similar 'technology protection systems'. Now, the organisation RAFI (Rural Advancement Foundation International), which was the first to alert the world to Terminator technology, is drawing attention to what it calls 'Traitor' technologies – of which Terminator is just one. 'Traitor' is a name given to a whole host of different biotechnological ways in which the idea of the

seed can be distorted and controlled, for the benefit of whoever holds its patent.

Commercially, from the corporation's point of view, there is a flaw in the Terminator model. For whilst it allows control of the growing system, the corporation is required to grow, store and market the seeds itself. This means that elements beyond corporate control could impact on the bottom line – for instance, the weather. And as the multinational's ultimate goal is to only involve itself in things it can control, this was something to be avoided.

And so, Traitor technology was born. Its key feature is that the farmer no longer has to repeatedly buy seed – but instead, has to repeatedly pay for the seed. Once the technologies are working, genetic traits within a seed can be turned on and off with the application of a proprietary chemical, such as a herbicide or fertiliser.

'People instinctively understood that genetic seed sterility was an immoral, dangerous technology,' explains Hope Shand, RAFI's research director. 'That's why Monsanto and AstraZeneca have been forced to back down for the moment. But Traitor is even more insidious, because these companies will argue that genetic trait-control offers benefits for farmers. In reality, it will further enslave them to the corporations.'

So what are the 'benefits' that will be offered to farmers? The most obvious 'benefit' will be that the seed becomes fertile in the first place. This is the simplest version of what is to come. The most obvious use of this technology would be to create crops that have the potential for beneficial traits engineered into them, so that a farmer can purchase an 'upgrade', such as chemical induced improvements to yield or processability. But the biotech companies are also directing their energies in a different direction. They are looking to engineer negative traits into the crops, traits which need to be 'turned off', such as inhibitions to good yields. There will obviously be a much greater incentive for the farmer to apply the correct chemical in this case.

But why would any farmer want to get caught up in this kind of trap? In the first instance, it will actually be hard to identify whether the chemical application is turn-

ing on a positive trait, or turning off a negative one. Then there are the ways in which seeds are sold. It is not always possible for farmers to demand a choice, and as a few companies increasingly control seed markets, this choice will evaporate further.

And as with Terminator, there will be claims about the increase in biosafety that will inevitably arise from its application. If you need to specifically dose the crop with a chemical to achieve a fertile seed, the argument goes, the risk of any accidental transgenic escape will evaporate.

So how far has the Traitor idea gone? Currently it is still in the laboratory, and the chemicals involved are crude – for example the D&PL patent depends on the antibiotic tetracycline as the external catalyst. Luckily, it is unlikely that seeds soaked in this will be spread, as it is too expensive. But new ideas keep emerging. For example, AstraZeneca has patented a technology which claims to produce plants that need continuing exposure to a specific chemical – not just for germination, but also for healthy growth. There are three different chemical promoter systems being investigated – but what could be more logical than for the company to incorporate them into its own herbicide or pesticide? And in the end, it is not beyond reason that the chemical becomes the herbicide or pesticide itself. The companies need to tie farmers into their chemicals. This technology is likely to create an urgent addiction.

The future could be bleak. RAFI estimates that by 2010 the majority of the world's non-subsistence farmland will be under Traitor – unless the technology is banned. 'In less than 10 years, 12,000 years of farmer-saved seed and community plant breeding could be irreversibly brought to an end,' says Hope Shand. 'The companies tell us that trait control will mean more options, but chemically-dependent seeds will more likely lead to bioserfdom.'

Hugh Warwick is a journalist and editor of Splice, the magazine of The Genetics Forum. www.geneticsforum.org.uk

RAFI is dedicated to conservation and sustainable improvement of agricultural biodiversity, and responsible development of technologies useful to rural societies.

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GETTING BACK TO NAM

DAVID EDWARDS REPORTS FROM THE US ON THE NATIONAL ASSOCIATION OF MANUFACTURERS' DISTURBING ATTITUDE TOWARDS GLOBAL WARMING

WHILE ACTIVISTS CONCENTRATE on exposing the machinations of the disintegrating Global Climate Coalition (GCC), other far more powerful business front groups and associations are working all out to prevent even trivial action to combat global warming.

CONSIDER TWO INSTRUMENTS of power: the United States Chamber of Commerce and the National Association of Manufacturers (NAM). Unlike the GCC, these set-ups represent the interests of just about every large corporation you've ever heard of: Coca-Cola, McDonald's and Unilever, the major sponsors of this year's 'Green Olympics' in Sydney, for example, are all members of the NAM.

The NAM, in fact, has a long history of aggressively promoting US business interests at the cost of human rights and the environment. The NAM is also on the Board of the GCC. Like the GCC, the NAM has been vigorously opposing even the modest greenhouse-gas cuts proposed at Kyoto.

As recently as October 1999, the NAM reaffirmed its opposition to Kyoto. Consider the following declaration, titled 'Global Climate Change, October', widely available to the public through the NAM website but, to my knowledge, unreported in the press:

'On 4 April 1998, the board of the National Association of Manufacturers (NAM) adopted the following resolution on the Kyoto Protocol:

'The National Association of Manufacturers supports the improved performance of the US economy and recognises the importance of economic prosperity to, and its interrelationship with, health, happiness and environmental protection. The global environment has become a matter of concern, with climate-change issues becoming more important to people both in the United States and throughout the world. Accordingly, while much uncertainty exists about the science and the effects of greenhouse-gas emissions, the NAM believes that American industry's unrelenting voluntary efforts to become ever more efficient in a globally competitive market, including increasing energy efficiency, will have the

effect of reducing US greenhouse-gas emissions. Additionally, we support the following environmental and energy-efficiency objectives:

- * Seek market opportunities, as well as identify impediments, for earlier and wider applications of existing energy-efficient, low-emitting technologies.*
- * Identify international trade barriers and opportunities for exporting clean, energy-efficient US technology.*
- * Conduct research and development for new technologies and processes to increase energy efficiency resulting in cleaner processes.*

'We believe that the Kyoto Protocol to the Convention on Global Climate Change is inherently flawed in its omission of the developing countries and, therefore, will damage the US economy without achieving the desired environmental benefits...

*'We oppose the Kyoto Protocol and urge the President and Congress to reject it. We also oppose attempts by the Administration to mandate greenhouse-gas emission reductions in the absence of Senate ratification of a protocol to the Convention on Global Climate Change and/or enactment of specific authorising statutes.'*¹

NAM continues to urge... Administration and Congress to reject the Kyoto Protocol as irreparably flawed and begin negotiations on a new approach consistent with NAM principles, which call for US climate-change policies to be "voluntary, cost-effective, compatible with our marketplace economy, flexible, global in scope and involve all of our trading partners".'

A BRIEF HISTORY OF THE NAM

The National Association of Manufacturers was founded in 1895 to advance, says its website, a pro-growth, pro-manufacturing policy agenda.

In 1948, the NAM vice president for public relations Holcombe Parkes explained the NAM's mission then (and since):

'The story of business economics and philosophy needs to be told simply, understandably, repetitiously and without dilution or distortion – to broad masses of the people.'

In response to this campaign, also in

1948, Neal Edwards, president of the Indiana Congress of Industrial Organisations, a labour organisation, discussed 'our efforts to expose the NAM for what it is... industrialists organised for the sole purpose of protecting their profit-bursting pocketbooks'.

In 1948 Marshall Adams, of the Association of National Advertisers, delighted unions and outraged business leaders by denouncing the NAM's campaign of indoctrination, which boiled 'down to an effort to cover up the evils of the private enterprise system and to propagandise against changes to improve that system'.

The influential US Chamber of Commerce takes a similar stance to NAM and GCC. The following is taken from the US Chamber's website:

'Efforts by environmental extremists to over-regulate the marketplace and put huge new mandates on businesses will be opposed. A new radical environmental movement has started at the grassroots level pushing for regulations based on race and socio-economic status. The US Chamber leads the opposition to these groups. In addition, the Chamber is pushing for common-sense regulatory reform to make it easier and less costly for businesses to do business.

*'Priorities include: "Prevent the implementation of the Kyoto Climate Change Treaty".'*²

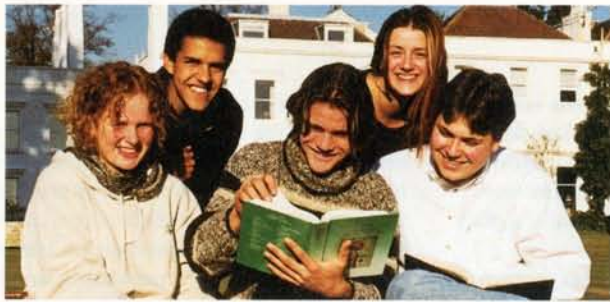
While climate scientists advise that a 60 per cent reduction in greenhouse-gas emissions is required to stabilise the climate, these powerful organisations – representing the might of corporate America and elsewhere, are vigorously opposing the 5.2 per cent cuts proposed by the Kyoto Climate Treaty and described as 'trivial' by Dr Mike Hulme of East Anglia University.

While various environmental groups describe themselves as 'media savvy', few appear to be aware or concerned that the media has almost completely failed to report the true depth and sheer irresponsibility of business opposition.

Further reading

1. www.nam.org, January 2000
2. www.uschamber.org, January 2000

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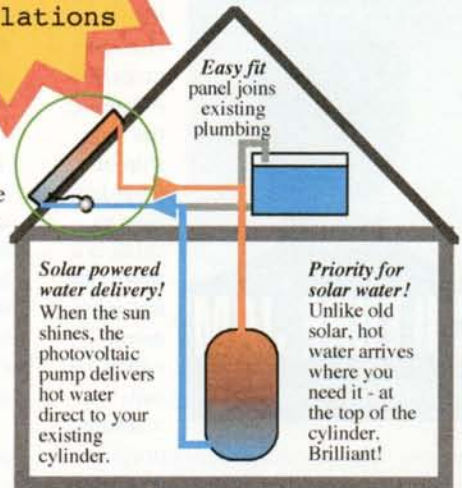
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CULTURE JAM: THE UNCOOLING OF AMERICA™

By KALLE LASN
Eagle Brook, USA/\$25.00



Kalle Lasn is editor of the Canadian magazine *Adbusters*, the flagship of what Lasn likes to think is a new political movement, which he calls

'Culture Jamming'. He introduces this concept on the very first page of the book: its purpose is to turn the weapons of the consumer monoculture against itself: to use advertising, design, new media and all the other tools of selling to sell what he calls 'moments of truth' – moments when you realise how wrong the modern world has

gone. Examples of such moments which have occurred to Lasn over the last decade or so include the revelations that 'America is no longer a country. It's a multitrillion dollar brand,' and 'American cool is a global pandemic'.

The book is dedicated to such moments: how to root them out, identify them and then spread the word – not by the usual channels of demonstrations, magazines, meetings and traditional activism, but by 'culture jamming', 'mind bombs' and 'meme warfare'.

It's an original and interesting concept, and it's laid out here with such zest, humour and originality that you can't help warming to it. For *Culture Jam* fizzles with life. For the first few chapters, it seems as if almost every page contains either a new idea or an old one dressed in different clothes.

And Lasn is one of those rare people who can not only produce the ideas, but can articulate them too. Sometimes he comes on like a virtual quote machine, coining aphorisms and cutesy little 'mind bombs' with the ease of a battery hen laying irradiated eggs.

Here he is, for instance, on adapting our ancient psyches to the modern media

onslaught: 'We are new evolutionary beings, panting for breath on an electronic beach'. On modern American values: 'You have moved so far into the consumer maze that you can smell the cheese'. Best of all, perhaps, is the simple question he asks at the end of Chapter Six, wondering simply

‘Sometimes he comes on like a virtual quote machine, coining aphorisms and cutesy little ‘mind bombs’ with the ease of a battery hen laying irradiated eggs.’

On CULTURE JAM

what is signified by an entire people watching, listening to and buying the same packaged entertainment from the same giant corporations: 'What does it mean when a whole culture dreams the same dream?'

There are, of course, some criticisms to be made. Firstly, there are the little mistakes that crop up. Two tiny examples: Lasn talks of the 'Multinational Agreement on Investment' (it should be

PERFECTLY SAFE TO EAT? THE FACTS ON FOOD

by VICKI HIRD The Women's Press/£8.99

If you need a good grounding in the politics behind British food production, then turn to *Perfectly Safe to Eat? The Facts on Food*.

In her new book, Vicki Hird, Policy Director of Sustain, the alliance for better food and farming, sets today's food industry in its historical context and explains the role of all the different players, from the bureaucrats in Europe to the family farmers. The list of official advisory committees alone is so bloated that it reads like a Swift novel: the committee on dwarf beans battles with the zucchini confederation for eye-level shelf space at Asda... You will be amazed at how complicated it is to get food on your plate.

But that's because the industry isn't run on common sense, explains Hird. By using the BSE crisis as an example, Hird shows how the greed of government and industry bodies has skewed the system, putting the health of the British consumer and countryside at risk. Did you realise, for example, that, for every supermarket that opens, an average of 270 local jobs are lost? Or that despite a battery of food scares, British dairy farmers still feed their cattle animal blood? Or that in 1996 a third of factory-farmed chickens were infected with salmonella or campylobacter bacteria? Or that McDonald's feeds one per cent of the world's population every day.

In fact, the book is a pretty gloomy read. But Hird counters this with a positive and realistic manifesto of

change that shows how the current regulatory bodies could create a more effective, less hazardous system. All schoolchildren under the age of 14 should be taught how to grow and prepare their own food, she suggests. And her idea that post offices could provide online information about local farmers and food producers, and a home delivery service to boot, is a good one too.

However, if you're at all interested in the British food industry – and, as Hird herself points out, in the wake of the BSE crisis most people are – then, aside from some of its interesting facts and details, this book may not have too much to teach you. It is largely a beginner's guide.

Also, Hird slides rather too glibly over key issues. For example, although she is very much in favour of organic and locally produced food, she doesn't explain how the world or even England is to be fed on such sustainable farming methods. For if, as she says, London alone needs an area of land the size of the whole of England to feed its population, then we may not have the space to grow all our own food. And if we don't, what's the most benign solution? Well, she doesn't really say.

Having said that, however, *Perfectly Safe to Eat?* is of great value. It is clear, informative and does much to untangle the mire of vested interests and trouble that is the British food industry. A recommended read.

Lucinda Labes



'Multilateral'); and he seems to think that Magna Carta was an example of the English common people asserting their rights against a stubborn king, rather than the baronial stitch-up that it was. Minor points, it's true, but it does pull you up just a bit when an argument is backed up by a not-quite-right fact.

Another criticism is a wider one: it concerns 'culture jamming' itself. A friend of mine recently referred to this as 'a bunch of rich kids with computers', and he had a point. For culture jamming provides no real philosophy or programme for change. And while Lasn rants, entertainingly and often rightly, against the failures of dogmatic 'Lefties' to achieve lasting change, there's no real sense here that culture jamming or meme warfare can do any more, ultimately, than make people think. Perhaps that's enough. But in a world where Benetton can use pictures of condemned US murderers to sell jumpers, how far are we from the point when corporations start 'culture jamming' themselves?

But the book's message, and its roller-coaster style, ultimately triumphs over such complaints and concerns. In the last but one chapter, Lasn compares the visions of the twentieth century's two great dystopia novels – Aldous Huxley's *Brave New World* and George Orwell's *1984*. The difference, he says, is that Huxley's vision is at once more sinister and more like the reality of today's increasingly inescapable consumer monoculture:

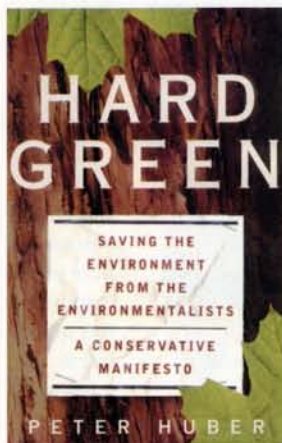
'Unlike the people in Orwell's *1984*, who resent being controlled by Big Brother but feel powerless to resist, residents of Huxley's realm willingly participate in their manipulation. They happily take soma. They're in the loop, and, by God, they love it. The pursuit of happiness becomes its own end... The people... believe they live in Utopia. Only you, the reader... know it's Dystopia. It's a hell that can only be recognised by those outside the system.'

The key to kicking Dystopia into touch, both in Huxley's imagined world and in today's real one, is getting outside that system; recognising it for what it is, then starting to think about how to subvert it. How to do that? Where to start? Well, reading this book will give you a hefty shove in the right direction.

To insert a little bit of subvertising myself: Just do it!
Paul Kingsnorth

HARD GREEN: SAVING THE ENVIRONMENT FROM THE ENVIRONMENTALISTS – A CONSERVATIONIST MANIFESTO

By PETER HUBER
Basic Books/US\$25



Perhaps the irony escaped the author of this shameless apologia for life-defying global polluters, but the title of his book has a delicious double entendre. 'Hard Green' could refer to

the hard cash – US greenbacks – that he presumably received for compiling this obsequious ode to the fast buck and bottom line. Peter Huber may not be much of a truth-sayer, but as a soothsayer he suits his corporate masters to a T: his pseudo-scientific pontifications must be soothing to their collective conscience.

Huber makes a clear distinction between 'Hard Greens', whom he endorses, and 'Soft Greens', whom he despises. The former category consists of bear-baiting Teddy Roosevelt wannabees, pig-sticking pukka sahibs and Toshiba-toting eco-tourists, who want to preserve great chunks of nature for their personal enjoyment. The latter group is made up of those whining whale lovers, owl spotters and tree huggers who try to prevent trawlers, loggers, miners and oil-drillers from making an honest living looting our planet's finite resources. But, as Denis Hayes, international chairman of Earth Day Network, sums it up in a recent essay in *WorldWatch*: 'Most of the world's great biological systems are in a state of collapse because we have logged, trawled, or cultivated them to maximise short-term production. Plant and animal species are going extinct at the fastest rate in 65 million years'.

Meanwhile, Peter 'what, me worry?' Huber insists that capitalism and a free market are Mother Nature's closest allies in restoring the status quo ante diluvium. It is hard to believe that anybody with a law degree from Harvard and an MIT diploma

could be that naïve. But perhaps the US Ivy League colleges are not all they're trumped up to be. After all, the current contenders for the Oval Office, Buddhist buddy Al Gore and the sage Bush of Texas, are both Yale alumni.

Huber's definition of efficiency is a real thigh-slapper. Listen up:

'It is the free market that delivers real efficiency... because economic freedom lets us optimise our... choices [in] comfort, pleasure and satisfaction. Yes, a gas-guzzling sports utility vehicle is indeed "efficient": it makes the driver richer, in that he is happier owning the car than something else he might have bought. That's what "efficiency" means in economic parlance, and that kind of efficiency is the only kind that limits its growth. It does so by making us richer. Much of the time', proclaims the oracle of selfish, 'the Soft Green preoccupations with "energy conservation" is positively harmful'.

No doubt all those Americans who acquired gas-guzzling SUVs just before the price of petrol doubled at the pump will be pleased to learn that they were motivated by a selfless quest for greater economic efficiency.

Huber goes on to assure the reader that 'There is no inherent scarcity of food, metal, mineral or space to bury our trash... No law of geophysics, biology, engineering or economics decrees: "So far, but no farther"; free markets and human ingenuity transcend all limits'. The fact that world population has tripled in the past century is dismissed as irrelevant to Peter's principle of economic excess, aka Hard Green environmentalism.

Ever the sceptic, the author claims that all the money and resources that have been applied to the study of toxic pollutants and acid rain, global warming and dying reefs, are a total waste. It's all phoney science, 'irreducibly political [and] perfectly designed to fund and grow [sic] the critical establishment', the academics and bureaucrats whose job it is 'to image, worry and prescribe'. Along with *Candide*, he shares that 'mania for maintaining that all is well when things are going badly', which is Voltaire's well-known definition of optimism.

But Huber is not content with relying on the wisdom of the marketplace. No, sirree! He has also had what virtually amounts to a religious epiphany. For did God not instruct Noah that man should subdue nature and have dominion over all his

co-inhabitants on planet earth? It is right there in the Old Testament – the ultimate authority on ecological science. And there is nothing in the Bible about fouling our own nest.

So there – that should make the green 'softies' shut up!

But those among us who are serious in our concern for the environment ought not to be discouraged by the various pathetic scribbles of apologists like Peter Huber.

On the contrary.

When corporate polluters start grasping for such fragile straw men, we know it is a sign of desperation. And they know the cosmic clock is ticking. They just have blinkers on.

As Roman gladiators entered the arena, they faced the emperor's box and

‘It is the free market that delivers real efficiency... because economic freedom lets us optimise our... choices [in] comfort, pleasure and satisfaction. Yes, a gas-guzzling sports utility vehicle is indeed “efficient”: it makes the driver richer, in that he is happier owning the car than something else he might have bought.’

**Peter Huber
From HARD GREEN**

exclaimed: ‘Hail, Caesar! We who are about to die salute thee.’ Peter Huber and his fellow Hard Greens could take as their motto: ‘Hell, yes, we who are about to die pollute thee’. And, unlike that other, now extinct, master race, the dinosaurs of pre-historic days who marched on regardless of what was going on around them, they will be responsible for their own demise.

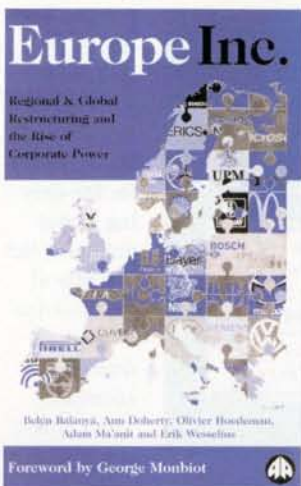
Unless, that is, the rest of us start taking immediate action to forestall any more of this degradation of the environment that is common to us all.

For starters, perhaps the next president of the United States could adopt the slogan ‘It’s the ecology, stupid!’

Gard Binney

EUROPE INC. REGIONAL AND GLOBAL RESTRUCTURING AND THE RISE OF CORPORATE POWER.

by BELEN BALANYA, ANN DOHERTY,
OLIVER HOEDEMAN, ADAM MA'ANIT
AND ERIK WESSELIUS.
Pluto Press/£14.99



This is a thorough – and thoroughly dispiriting – analysis of the power that Europe now wields throughout the world. But if information is power, as George Monbiot

comments in the foreword, then this book will go a long way towards undermining the established order.

The two environmental campaigns to have caught the public's attention in recent years – road building and genetic engineering – both have their genesis within the secretive world of the various European institutions.

As the vision of trade liberalisation is touted around the politicians and bureaucrats of Europe by an ever-expanding army of lobby groups, the agenda is shifted towards that of the multinational corporation. With the destruction of barriers arose the desire to speed the transit of goods across the continent – and so was born the Trans-European Networks.

And the development of genetically engineered food, while rejected by many elements within Europe, is still the focus of a grand lobbying effort.

A Eurobarometer poll showed recently that only 5 per cent of the population had full confidence in the biotech industry.

Yet despite this immense absence of mandate, the industry still has a powerful line into the decision-making bodies of the Commission through the lobbying muscle of EuropaBio – yet another industry artefact.

It is the power of the various lobby groups, think tanks and groupings of corporate leaders that is the most frightening rev-

elation of this book. There is a series of organisations that appear as the driving force behind the gradual takeover of Europe by the multinational corporations (MNCs). The European Roundtable of Industrialists (ERT), founded in 1983, consists of 45 'captains of industry'. The express purpose of the ERT is to shape an expanded Europe to benefit European corporations. This means that the nightmarish aspects of unregulated, global, free trade:

‘...a free-for-all global arena with lowered social and environmental standards in which only the fittest survive – are not part of the ERT's concerns’.

Corporate might is not being restricted to Europe. The Transatlantic Business Dialogue (TABD) is described as providing a ‘striking example of corporate-political synergy’. It has pushed for the systematic removal of barriers to transatlantic trade and investment since 1995.

The Dialogue was ‘rebaptised’ in 1998 as the Transatlantic Economic Partnership (TEP). The TEP works in tandem with the World Trade Organisation to enforce its particular world view. And when you have such large powers working together, it is no wonder that developing countries are unable to resist the continuing drive towards liberalisation.

And a key, central element of TEP philosophy is the Mutual Recognition Agreement (MRA). Essentially, this results in what *Europe Inc.* describes as ‘approved once, accepted everywhere’.

‘The starting point’, it continues, ‘for MRA negotiations is usually the lowest common denominator... meaning that one party will by default be forced to accept standards lower than its own democratically instituted ones.’

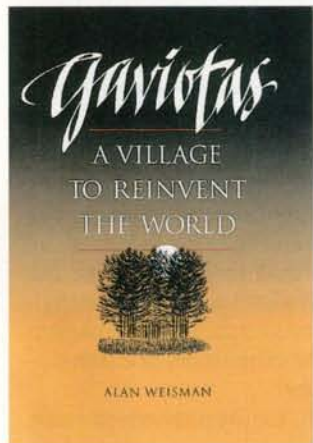
While focusing on the European angle, *Europe Inc.* also introduces the global equivalents of the TEP. These ‘Global Elite’ groupings of major corporations include the Bilderberg Group, the Trilateral Commission and the World Economic Forum.

In fact the whole book could be quite depressing – if it were not for the final chapter, which at least concludes in a slightly more optimistic manner, ‘As people all over the world continue to reject the corporate agenda, its powerful grasp on people's work, communities and lives will begin to crumble’.

Hugh Warwick

GAVIOTAS – A VILLAGE TO REINVENT THE WORLD

by ALAN WEISMAN
Chelsea Green Publishing Co
\$14.95 or £10.95



Alan Weisman, who spent many months in Colombia researching this fascinating book about a successful experiment in ecologically symbiotic living, has found a

nation with a rich cultural heritage and a biodiversity unsurpassed anywhere in the world. In 1994 Weisman was one of a team of journalists charged with documenting the search for solutions to the greatest social and environmental problems facing mankind. He took his quest to an unlikely locale: war-torn, drug-ravaged Colombia, where 25 years earlier a group of visionaries had decided to attempt the seemingly impossible – to fashion a self-sustaining community in the harshest setting they could find: the Colombian hinterland, a desert-like plateau known as los llanos, or 'the flatlands'.

Thus was born the extraordinary community of Gaviotas, named for the river gull, one of 1,780 bird species found in Colombia.

Gaviotas was founded by Paolo Lugari, assisted by a motley crew of Colombian and cosmopolitan idealists and adventurers, including Geoffrey Halliday, son of a British expatriate, and Dr Sven Zethelius, whose father had been Sweden's ambassador to Colombia. Despite their different national and educational backgrounds, they all shared one goal: to prove to themselves and the world that it was possible to build a society that could prosper under the most adverse conditions – and without depleting finite natural resources or polluting the environment.

If necessity is the mother of invention, the second name of Gaviotas should rightly be *Necessitas*. For in order to conquer the hostile environment of the llanos, the settlers had to strain their imagination and creative skills to their limits. Among the many ingenious inventions which gradually evolved through a process of trial and error was a system of solar

panels, so efficient that they could be used for sterilising water and instruments in the hospital the settlers built with 100,000 bricks made from the clay-like local soil. To supply water to the hospital and living quarters, a highly sophisticated manual pump was designed, with which it was possible to tap into the aquifer some 40m below ground. When these pumps were hitched up to swings and seesaws on the communal playground, the manual labour was replaced by benign, if unwitting, childpower; nothing was wasted!

Until the global energy crisis in the 1970s and the subsequent Arab oil embargo, people in the Colombian capital considered Gaviotas an intriguing experiment with little practical relevance. Then, as waiting in line for petrol gave the world time to contemplate the novel notion of renewable energy, Gaviotas began to attract serious attention, but it was not until the *Wall Street Journal* prominently featured a story about a South American community that had solved the energy crisis by devising implements powered by energy sources which were actually renewable, that a delegation from the United Nations Development Programme arrived to take stock. Impressed with what the Gaviotians had contrived out of cheap, recycled materials, the UNDP delegates watched approvingly as workers built a drainage culvert, using nothing but local material and their ingenuity.

From an ecological point of view, however, the reforestation project begun by Gaviotas pioneers will perhaps have the greatest long-term significance. In their search for a tree that would thrive in the highly acidic soil, they chanced upon the Caribbean pine. Over the years, millions of these hardy pines have been planted, providing not only lumber for the llaneros, but a seemingly inexhaustible supply of resin, an important component in the manufacture of paint, varnish, cosmetics and medicine, which previously had to be imported at high cost. In the words of the author: 'Gaviotas inaugurated a forest products industry that involved leaving trees in place, not mowing them down'. No mean feat in a world being raped of its virgin forests at a rate of 10,000 m² every second!

Anyone concerned with the survival of the human race on our fragile and much abused planet should read this book. They will be indebted to the author for his inspired account of this brave new world, tucked away in the heart of Colombia's vast savanna – a ray of hope in the darkening gloom.

Gard Binney

5 OF THE BEST

Alison Stancliffe is a writer and consultant on tourism education issues and founder of *Tourism Concern*, which campaigns for just and sustainable tourism. Here she recommends five books to get you thinking about travel and tourism.

The Community Tourism Guide by Mark Mann
Earthscan 2000

Mark Mann pulls off a seemingly impossible trick with this groundbreaking book – in his opening introduction to the concept of 'community tourism' he manages to educate and inform without being patronising. The entertaining travel pieces preceding his directory of 'exciting holidays for responsible travellers' illustrate vividly why taking a holiday that directly benefits a community beats most other travel experiences.

The Holidaymakers by Jost Krippendorf
Butterworth-Heinemann 1989, reprinted '99
If you read just one book about what makes modern tourism tick, this should be it. Swiss academic Jost Krippendorf shows how and why tourism is such a powerful force in our society and invites us to examine our own lifestyles in the process. If his solutions to tourism's many negative impacts seem Utopian, they're no less right for that.

Voices of the Old Sea by Norman Lewis
Picador 1995

In his portrayal of a fishing hamlet on the Costa Brava of 50 years ago, Norman Lewis documents how a tight-knit traditional community becomes a tourist resort over three seasons. It's a poignant evocation of a lost Spain; but it also stands as a universal commentary on how tourists' tastes and behaviour can alter lives and landscapes forever.

Last Resorts by Polly Pattullo
Latin America Bureau/Cassell 1996

This highly readable book helps you understand how modern tourism affects the developing world by putting the issues into a vivid geographical context. Taking tourism in the Caribbean as her subject, Pattullo ably discusses how this global industry has affected the region's societies and natural environments, on beautiful islands where 'paradise' rubs shoulders with poverty.

Preserve or Destroy? By Jonathon Croall
Gulbenkian Foundation 1995, reprinted '97
Jonathon Croall's thorough examination of tourism's damaging impact on the environment could make depressing reading. But scattered through the book are accounts of how initiatives in the UK and Ireland are meeting the challenge of reconciling tourism with the goal of sustainable development. So there's plenty of inspiration here, along with ideas showing how you can meet the challenge yourself.

THE CROW

THE CROW family: collectors of fascinating trinkets, portents of doom; symbols of spirituality, emissaries across the flood. And if THE CROW should make wing to the rooky wood, then the world will be turned on its head. To see which way the wind blows, keep your eye on THE CROW.

LIVE LONG AND PROSPER?

The medical profession just loves it when we all live longer. Yet THE CROW reads between the lines

In the business of rethinking basic assumptions, as I am, and have been for a long time now, you have to be careful not to let one or two of them slip you by. Let's take, as an example, longevity. That's been in the news a good bit these days as people have looked back on the century theoretically just past and tried to assess it — usually in terms of 'progress', that fundamental assumption of modern society.

Here is how it is dressed up. Life expectancy at birth in the US in 1900 was 41 years, in 2000 it is 78.5 years. People are nearly doubling their allotted time on earth. A triumph of modern science.

For whom? I ask.

Why, for everyone, I am told. People are living longer all over the world. The way we measure the health and success of a country is by its life-expectancy figures. And in most places they are going up.

So let us assume that this first assumption is correct — namely that we are living longer than our ancestors. Let's ignore the distasteful fact that perhaps what makes this appear so is the extraordinary skills of industrial man in tipping the scales in favour of the infant and of increasing the national average. Let's ignore the second assumption, namely that increased age translates in modern society to increased satisfaction. Here of course we should overlook the horrifying statistics of mental and physical degeneration that more and more dominates the latter part of human lives so that cancer, Parkinson's, Alzheimer's, osteoporosis, MS, ME, and endless other Ms and Es are the norm. Overlook too for the time being the charts that show eighty thousand grannies are dumped identity-less on US streets each year by their own children. As I said, let's assume despite bundles of evidence to the contrary that things, for the individual, are getting ever more rosy.

Do you seriously believe, I ask, humans can live twice as long as before and not have any impact on the rest of the life we share the earth with? Particularly humans in the high-consumption nations, where longevity is greatest, who now accumulate twice as much material stuff, use twice as many services, produce twice as much waste and garbage, and make at least twice as much of an impact on the environment as a hundred years ago. Don't you

suppose, in fact, that this is primarily what has caused the alarming extinction rate over the last century, now amounting to something like two species going every hour, threatening the entire interworking of the web of life and thus the future of the human animal? Don't you suppose that this, along with the allied increase in population, is largely what has created the environmental crises connected to overconsumption, the depletion of the fisheries, the loss of topsoil, the exhaustion of water supplies and the destruction of rainforests?

The longevity assumption, though, is obviously not so easily eradicated, and I think that is because it is intertwined in a deep psychological way with the crusade that represents the most hubristic aspect of our enchantment with high technology — the crusade against death.

Perhaps it is true that people in most societies at most times in history have sought to stave off death, although most tribal societies so effectively came to terms with it that they were able to accept it as a normal, if not always welcome, inevitability in the circular journey of life. In our time, however, in our industrial society, we seek not only to stave it off but to triumph over it completely.

'Do you seriously believe humans can live twice as long as before and not have any impact on the rest of the life we share the earth with?'

Geneticists, for example, are talking these days about life spans of several hundred years being possible for people being born in the near future. One gene-splicing expert was recently quoted as saying he saw no reason why, theoretically, people should not soon be able to replace every organ and tissue of their body with genetically matched reproductions.

And for those, whose body parts eventually wear out, the computer experts at the Massachusetts Institute of Technology have suggested that it will soon be possible just to 'download' one's mental processes into a machine that will keep running forever. It's not exactly my idea of life, but I suppose for a computer geek it seems good enough, and certainly cuts down on the need for pizzas and soda.

But of course that way madness lies. The assumption that longevity is an unquestioned virtue and the conquest of death a legitimate human endeavour is at bottom deeply, fatally psychotic, as I'm afraid our society will come to realise. Dress it up however you like, but it is a psychosis that threatens life on the only planet that as far as we know has life.

How else would you define madness?

The Crow is a mouthpiece for thinkers with individual and strong views. This month, the role of The Crow was taken by Kirkpatrick Sale.

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