

PLANET • PEOPLE

THE
ecologist

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Life's a plastic beach

Inside Ocean Dome • p30

Deadly shampoos

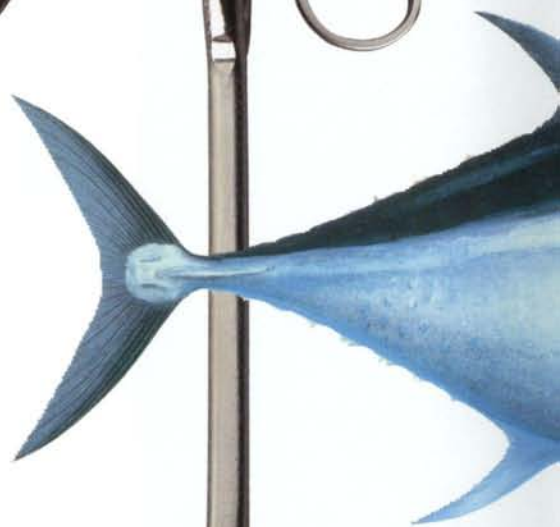
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Down on the farm

When *The Ecologist* helped to initiate Farm, a campaigning organisation for British farmers, we claimed that 11 farmers were going out of business every day. At the time I found the figure hard to believe. Now, we're told by the Office of National Statistics that 1,000 farmers and farm workers are leaving the land each week. That's 52,000 for the whole of last year.

Clearly that represents an enormous shift. But for the government's farming experts, it's a healthy one. Countryside Agency chair Ewan Cameron has said that farmers may need to join together in Soviet-style collectives of up to 20,000 acres to produce commodity crops at world prices, a view echoed by Lord Haskins, the government's rural recovery tsar.

What this means is that Britain's intensive farms will continue to produce food for as long as they can out-compete increasingly desperate developing countries. But very few people believe that will be possible for long. In truth, it is only a matter of time before farming becomes non-viable in Britain and we stop producing food altogether.

We will then need to access still more of our food from other countries. But for how long will we be able to depend on the global food economy to sustain us?

According to a new report by the UN, a combination of drought, deforestation, industrial agriculture and climatic volatility is responsible for the loss of 250 million acres of fertile soil each year, undermining the food security of 1.2 billion people in 110 countries.

Meanwhile, it is estimated that if just one sixth of the West Antarctic ice sheet melts, the resulting one-metre sea-level rise would cause 30 per cent of the world's total crop land to be swamped.

Unless these things are illusions crafted by Mr Bush's 'freedom haters', they do point to an unambiguous fact: that while the need for national food security in Britain is growing by the day, actual food security is being eroded; we are becoming reliant for our survival on a fundamentally unreliable system.

So why are we pursuing policies that render us so vulnerable? Corporate lobby groups aside, it's hard to explain. Why would anyone want to bank everything on the assumption that we will always be able to pay for the food we need, that the world's bread baskets will always be willing to provide it or for that matter that cheap oil will always be available to distribute it? How long do

we have before fresh water overtakes oil as the prime source of war?

There is a popular joke doing the rounds in France about a couple making love on a packed British train. Fellow passengers politely ignore them... until, that is, the man produces a cigarette. Within seconds he is curtly reminded of the train's no-smoking policy. Like the passengers, it's possible our representatives have chosen to avoid the uncomfortable. But there's more to it than that.

From a young age we are taught to believe that regardless of the scale of the problems confronting us, technology will always provide the solutions. When early campaigners sought to prevent the adoption of nuclear energy in Europe, their warnings of mountainous waste piles were greeted with derision by the establishment. Everyone knew that a technological solution would be found before the waste could build up. It never was.

It is only a matter of time before farming becomes non-viable in Britain and we stop producing food altogether



The trouble is, no matter how advanced a technology is it can never renew biological systems. To believe otherwise is a colossal act of faith. In that light, there is little to distinguish today's technological 'pragmatists' from the religious clergy of old, who believed humanity's problems would ultimately be lifted by divine salvation.

To criticise globalisation today is to court derision. But you can believe anything is possible through technology and still not be regarded as a crank. Even the respected cosmologist Sir Martin Rees, who believes we may perish this century through misuse of technology, maintains that humanity will probably colonise other planets as our own is left to die. For a lot of people, that is where our hopes should lie. Neil Armstrong for instance has said that 'the important achievement of [the moon landings] was that [they] demonstrated that man was not forever chained to this planet.'

Call me unpragmatic, but I favour a different course — one that requires no belief in our ability to cram evolution into a single generation. We could start by localising the food economy. All it would take are laws requiring producers to pay for their own damage and infrastructure, shifting subsidies away from export-oriented production and implementing laws protecting the local economy. Everyone would win — except the conglomerates, which couldn't hope to adapt to a local food system. As an act of charity, we could always offer them our space suits.

Zac Goldsmith, editor

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Bluefin Tuna



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'Seeing them gaffed is like watching a thoroughbred racehorse being hacked to death with an axe'. Richard Ellis reports on the killing of bluefin.

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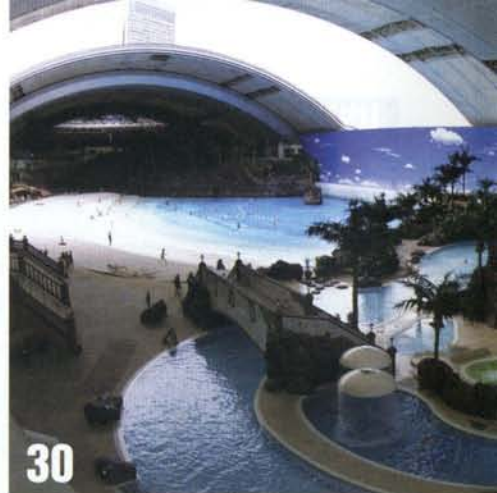
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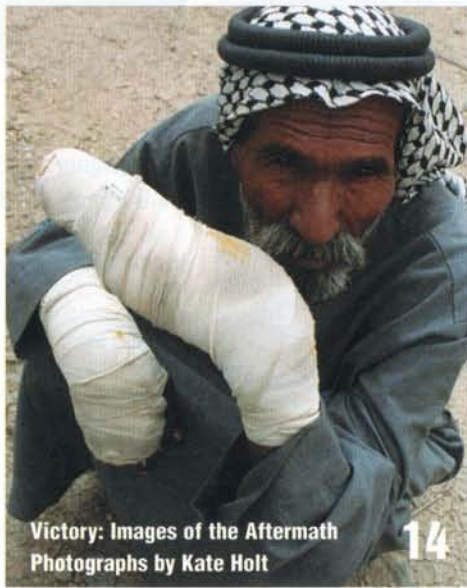
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David Boyle slips into a pair of bright, rented swimming trunks and heads for a fake paradise.



Victory: Images of the Aftermath
Photographs by Kate Holt

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UNITED STATES



Mining company sues under Nafta

Canadian mining firm Glamis Gold plans to use an obscure provision of the North American Free Trade Agreement (Nafta) to challenge environmental laws in California. For many years the company has been trying to build a gold mine in Imperial County, California, that would involve excavating 1,571 square miles of federally protected desert – including sacred and cultural sites. California recently passed strict rules governing open-pit mining that Glamis claims will make its mine economically unfeasible. Before the rules came into effect, the company says, the mine would have been worth up to \$50m. Glamis now plans to take the state to court under a Nafta provision that allows investors to sue foreign governments for compensation if they take actions that are 'tantamount to expropriation'.

Victory for whales

A federal court has issued a ruling barring the US Navy from deploying its high-intensity Low Frequency Active (LFA) sonar system across most of the world's oceans. The LFA system would have blasted hundreds of thousands of square miles of ocean habitat with noise so intense it can maim, deafen and even kill whales. In her historic ruling, judge Elizabeth LaPorte agreed with the Natural Resources Defense Council, the campaign group that brought the case, that the sonar's booming noise could 'irreparably harm' the marine environment and threaten the very survival of endangered populations of whales, sea turtles and other marine species. www.nrdc.org

Bush sued for being 'pro-environment'

The ultra-neo-liberal Competitive Enterprise Institute (CEI) has started legal proceedings against none other than the Bush administration in a bid to force it to stop distributing a report about climate change. The CEI claims climate change poses no real economic, environmental or health risks. It accuses the 2000 *US National Assessment of the Potential Consequences of Climate Variability and Change* (the product of almost a decade of work by dozens of government and private-sector scientists) of 'alarmism', and says it violates the Federal Data Quality Act. The act requires information distributed by the government to pass standards for objectivity, quality and utility.

Human shields 'violated sanctions'

The US Treasury's Office of Foreign Assets Control (Ofac) has recently been contacting an undisclosed number of protesters who travelled to Iraq as 'human shields' before the war. Ofac has warned them that they face \$10,000 fines for violating US sanctions that forbade most travel to and commerce with Iraq during Saddam Hussein's regime. If they don't pay, the human shields could face up to 10 years in prison. The Treasury said that the effort to enforce pre-war sanctions was 'absolutely not' politically motivated.

Disposing of WMD the American way

The US Army has started incinerating millions of pounds of chemical weapons stored at an army depot in the Alabama town of Anniston. The process is expected to take seven years. About 250,000 people live within a 30-mile radius of the plant. Nonetheless, a federal judge has ruled that incinerating the weapons poses no immediate health risks, and has allowed the incineration to proceed. A 1997 treaty requires the US to destroy its chemical weapons stockpiles at eight sites around the country. But at many other US chemical weapons sites a safer method will be used, one that neutralises the chemicals by mixing them with warm water or other non-toxic liquids. This eliminates the need for chimneys spewing fumes into the local environment.

Et cetera

Researchers have announced that living in sprawled-out US communities adds an average of six pounds to a person's weight... Republican Party employs telesales operatives in India to raise funds... The government urges the US Postal Service to create 'smart stamps' to help track the identity of people who send mail... A former CNN anchor has hooked up with a website that offers to 'have a real celebrity call you or a friend for just \$19.95'.

Cost of war

At the time of going to press, the war with Iraq had cost the US \$72,205,500,249. Every passing second adds another \$3,000 to that figure. For the same sum nearly 13 million cars could have been converted to run on natural gas. To see how much the war costs now, go to www.costofwar.com.

PORTUGAL

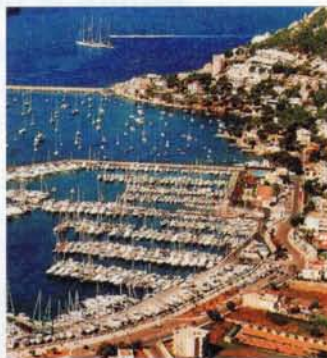
Wild fires push lynx nearer to extinction

Europe's only native big cat, the Iberian lynx, is closer than ever to extinction following a series of devastating wild fires that hit Portugal during this summer's continent-wide heat wave. Only about 120 lynx remain in the wild in Portugal and south-western Spain. The figure is down from 3,000 in the 1960s. 'The main problem of the lynx, a lack of prey, has just got much worse,' said *Ecologist* columnist and president of the conservation group SOS Lynx Eduardo Goncalves. 'We are on the verge of the first-ever extinction of a big cat species in modern times.'

THE BALEARICS

End to eco-tax

In one of its first announcements since coming to power in the Balearics, the Popular Party (PP, led nationally by Spanish president Jose Maria Aznar), has said it will scrap the islands' eco-tax 'as soon as possible'. A year ago the islands introduced a tax on tourists of 1 euro per person in a bid to limit the environmental damage done to the islands by mass tourism. In its first 12 months the tax raised £25m. Not only has the PP scrapped the tax, it also intends to build new motorways, golf courses and marinas on the islands.



PERU

Campaigners achieve \$1.6 billion pipeline reversal

A controversial pipeline project is in jeopardy after the board of directors Export-Import Bank of the United States (Ex-Im) voted to reject financing the scheme. Following intense pressure from environmental and human rights groups and members of Congress, Ex-Im has decided not to provide \$1.6 billion to the Camisea Gas Project in Peru. The key issue at Ex-Im was the refusal of the Peruvian government and companies involved to loosen 2004 gas delivery deadlines and so avoid a continuing pattern of negative, environmental and social impacts.

SOUTH AFRICA

Free GM seeds for farmers

South Africa's Department of Agriculture has been giving away free GM maize seeds to small-scale farmers. According to Thoko Makhanya of environmental group Safeage, government officials gave away free GM



seed in the province of Kwa-Zulu Natal and GM giant Monsanto did the same in the Eastern Cape.

UNITED STATES

SENEGAL

No more mining

Seeking to reduce deforestation in Senegal, the government will grant no more permits for quarrying or mining in any of the country's 233 forest-conservation areas. And firms already working in these areas will be urged to end such operations. Senegal's environment minister Modou Fada Diagne announced that mining and quarrying permits would in the future be awarded in accordance with environmental and social impact studies, and that companies would be required to restore the environment to its original state after extraction ceases. A UN Food and Agriculture Organisation study found that 45,000 hectares of Senegalese forest was lost between 1990 and 2000.





DENMARK

Lomborg rubbished again

A panel of independent Scandinavian scientists has announced that recent reports by Bjorn Lomborg, the author of *The Skeptical Environmentalist*, were unscientific and of dubious value. The Danish government had asked the panel of five academics to evaluate reports from an environmental institute headed by Lomborg after a prestigious Danish committee accused him of scientific dishonesty earlier this year. 'None of the reports represent scientific work or methods in the traditional sense,' the panel declared.

THAILAND

Thailand turns its back on IMF

The early repayment in August of \$12 billion borrowed by Thailand from the International Monetary Fund has been interpreted as a deliberate rejection of the fund's neo-liberal doctrine. Announcing the decision, prime minister Thaksin Shinawatra declared that Thailand would 'never again fall prey' to the forces of foreign capital or need to resort to IMF help.

TAIWAN

Pig deaths highlight cloning dangers

Three cloned adult pigs have died from heart attacks, raising further fears over the safety of cloning procedures. Of the four cloned piglets born, one died within days. The remaining three have now all died at less than six months of age. The deaths bring further into question plans to transplant hearts or livers from cloned pigs into humans. Researchers have already genetically engineered partly humanised pig cells and then cloned them to make whole pigs. They hope that the animals' organs will not be rejected by human recipients.



AUSTRALIA

Putting nuclear in its grave

Rehabilitation work has begun at the Jabiluka uranium mine site in Queensland, with mining company Energy Resources of Australia (Era) actually putting uranium back down the mine. 'This is a huge win for the land's traditional owners, environment groups and the many thousands of people across Australia and around the world who have opposed this mine,' said Australian Conservation Foundation nuclear campaigner Dave Sweeney. 'It is a major step forward in the protection of the [area's] natural and cultural values for all time, and a tribute to people's efforts and actions.'

Rehabilitation of the Jabiluka site is seen as a major step towards the final resolution of one of the largest environmental, indigenous and anti-nuclear struggles in Australia. Work at Jabiluka has been stalled since September 1999, and the issue has been a major embarrassment for Era's parent company – the British-based mining giant Rio Tinto. Some 50,000 tonnes of uranium ore are to be re-buried at Jabiluka and the mine entrance will now be sealed.



UGANDA

Power company withdraws from controversial dam project

New York-listed power company AES Corp has pulled out of a World Bank-sponsored dam project in Uganda, raising questions about the future of the controversial scheme. Environmentalists say the Bujagali dam on the River Nile would create a socially and environmentally destructive reservoir, drown sites sacred to local people and fail to meet Uganda's energy needs. NGOs welcomed the news of AES's withdrawal.

The \$580m project is currently delayed by a US government probe into allegations of corruption, although AES says the decision to pull out was not related to the investigation but based on economic reasons.

NEW ZEALAND

Support for GM plummets

A nationwide survey found that 69 per cent of New Zealanders want to extend the country's three-year ban on releasing GMOs. The ban is due to end on 29 October.

The proportion of people who said commercial release of GMOs should be 'banned for good' jumped from 23 per cent in June last year to 38 per cent in the latest poll. The percentage for people who are willing to allow commercial release 'under strict conditions' plunged from 67 to 52. And the proportion of people who felt genetic engineering should be 'exploited as much as practical' slipped from 6 per cent to 5 per cent. The poll was commissioned by *The New Zealand Herald* newspaper.

PHILIPPINES

Paramilitaries patrol mines

Canadian mining company TVI Pacific is funding paramilitary units trained by the Filipino military to suppress protests against a proposed gold mine in the region of Western Mindanao, the indigenous group Siocon Subanon Association Inc (SSAI) reports. SSAI has repeatedly called for the government to stop training paramilitary units, remove TVI and support small-scale local miners. However, a new paramilitary unit recruited 88 members in April, and it conducted the extra-judicial execution of a local activist in May.

Mass direct action against GM plantings planned

With the results of the GM field-scale trials expected this month, and the government set to announce its intention of planting GM crops across the UK, a new direct action group has sprung up in protest.

The Green Gloves campaign is urging UK citizens to sign its pledge, which declares: 'If the UK government gives the go-ahead to commercialise the growing of GM crops against the overwhelming wishes of the British public, I pledge to non-violently remove GM crops from the ground or support those who take action to remove GM crops.'

Sign the pledge, or find out more, at: www.greengloves.org



Right to know about pesticides threatened

The agrochemical industry and big farming interests are conspiring to hijack a consultation that could lead to greater transparency about farmers' use of pesticides, the pressure group Pesticide Action Network UK (Pan UK) warns.

'People don't realise that currently we have no legal right to know what pesticides farmers are actually using', says Pan UK's Alison Craig.

'If you crossed a field that had been recently sprayed and it made you so ill you were taken to hospital, the farmer would only have to disclose to the authorities the chemicals involved. He would not have to tell you.'

The government has launched a public consultation on the issue, but Pan UK fears that the people who are most affected know nothing about it.

In the meantime, a massive vote of opposition to disclosure has been made by powerful farming and agrochemical industry interests.

The government is also consulting the public over the possibility of no-spray buffer zones.

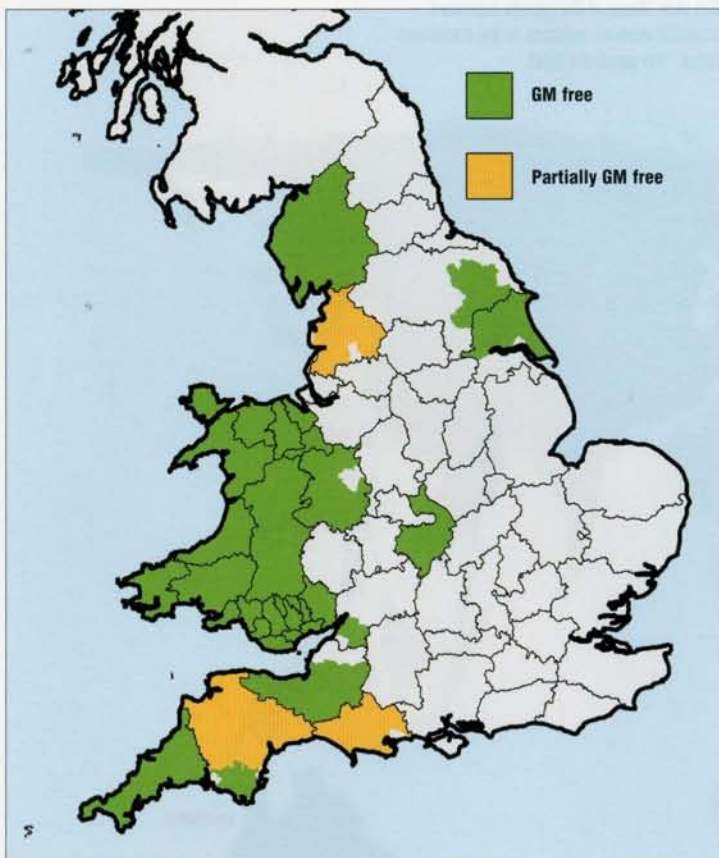
'No-spray zones are essential – especially near people's homes, schools, children's nurseries, homes for the elderly and on fields where there are rights of way', says Craig.

www.pan-uk.org/press/PSD_Cons.htm www.pesticides.gov.uk/applicant/aahip/aah10320.htm

GM FREE ZONES MAY BE ILLEGAL

Recent attempts by certain county and district councils to create GM-free zones could be in breach of EU law, according to the European Commission. In September the Commission ruled that it would be illegal for governments to impose a general ban on genetically-modified plants. However, it may still be possible for UK local authorities to become GM-free zones under Article 19 of the European Deliberate Release Directive, which makes it possible to challenge the technology on a case-by-case basis.

Go to the Friends of the Earth website for details of GM free councils, and how to lobby the councils that aren't yet GM free. www.foe.org.uk



More companies added to Burma 'Dirty List'

Advertising giant WPP, accountancy and consultancy firm Ernst & Young, P&O Cruises, Deutsche Post and Hutchison Whampoa subsidiaries Superdrug and mobile phone business 3G have all been added to the new edition of the Burma Campaign's 'Dirty List'.

'The Dirty List exposes companies who are directly or indirectly helping to finance one of the most brutal regimes in the world,' said Burma Campaign UK director John Jackson. 'Foreign investment and trade can benefit developing countries, but in Burma they help

finance a regime that uses rape, torture and murder to oppress its own people.'

WPP's successful takeover of Cordiant Communications means the firm now operates in Burma via the subsidiary Bates Myanmar. Ernst & Young has a partner in Burma. P&O Cruises has merged with the Carnival Corporation, which operates cruises to Burma. Deutsche Post subsidiary DHL itself controls a Burmese subsidiary via a joint venture with the junta. And Hutchison Whampoa operates a port in Burma.

'Most companies will not get involved with Burma because of the ethical issues involved,' said Jackson. 'It is significant that even without investment sanctions only two FTSE-100 companies, [tobacco firm] BAT and WPP, have any significant involvement in Burma.'

www.burmacampaign.org.uk



Gillette gives up on 'smart' tags

Gillette has abandoned the use of radio-frequency identification (RFID) smart-chips in its



products after a trial of the surveillance technology at a Cambridge Tesco attracted protests by residents concerned about civil liberties. Gillette announced it was abandoning the use of RFID after the story was covered in the firm's home-town newspaper *The Boston Globe*.

'Flash mobbing' hits UK

A new form of activism called 'flash mobbing' has arrived in the UK. Arranged via mobile phones and leaflets, flash mobs involve hundreds of people converging at a venue at the same time to perform a single act of dattness. The aim of flash mobs, which have previously been seen in Europe and the US, is to subvert the sterility and homogenisation of our globalised environment.

In one event in August about 300 people arrived at a Sofas UK furniture store in central London. Leaflets handed round local pubs had instructed participants to 'look at a sofa with reverence and awe and speak the words, "oh, wow, what a sofa".'

At another event around 50 people gathered outside an Oxfam shop in Birmingham. They waved garments above their heads and sang a chorus of the Red Hot Chili Peppers' song 'Give it Away', urging one another to hand unwanted clothes over to the shop. Oxfam deputy manager Ken Cox admitted he was shocked by the sudden rush of donations at exactly 12.12pm, but grateful for the altruism of those taking part.

FRIENDS OF THE EARTH



Mad dogs protected from midday sun

A German firm is launching designer sunglasses for dogs on the UK market. The firm's manager Silvia Wilsch Herold said: 'We found people were prepared to pay a bit more for fashion, so we have mirror shades, and frames in different colours – with more varieties for the smaller dogs as their owners are more demanding. We do a special gold frame for example just for Yorkshire Terriers.'

Wal-mart seeks to scrub up its tainted image

Wal-Mart has been using a PR consultancy to analyse its public image and has commissioned radio and TV ads to try to reverse criticism from local officials and consumers, *The New York Times* reports.

'It is,' the paper says, 'the first time that Wal-Mart, known for parsimony in its business practices, has invested in



"reputation research" and then spent more money to try to repair the distressing aspects of what it found. [It discovered] that many people view it as a place of dead-end jobs, and [feel] that its performance as a corporate citizen leaves much to be desired. To reverse the impression about its jobs, Wal-Mart is broadcasting three ads nationwide that portray it as a great place to work.'

A fair and balanced verdict

A legal bid by Rupert Murdoch's Fox News to prevent humourist Al Franken and the Penguin Group from using the phrase 'fair and balanced' in the title of an upcoming book has been thrown out of court. Fox had tried to force Penguin subsidiary Dutton to change the title of *Lies and the Lying Liars who Tell them: a fair and balanced look at the right* as Fox News had previously

registered 'fair and balanced' as a trademark in 1995. The judge declared that Fox's case was 'wholly without merit, both factually and legally'.

GlaxoSmithKline co-opt the Mr Men

Pharma giant GlaxoSmithKline has sponsored a special new Mr Men book in order to promote its anti-allergy medicines. The firm has paid Adam Hargreaves, the son of Mr Men creator Roger Hargreaves, to pen *Mr Sneeze and his Allergies*. In the story, which doesn't refer to the products directly, Mr Sneeze suffers from a summer ailment he believes is a cold. His companion, Little Miss Sunshine, suggests he might have hay fever, but his sneezing still doesn't stop even after he ploughs up all his grass.



SELLAFIELD PIGEON



Droppings from the pigeons living near Sellafield are classified as nuclear waste... More fresh pickings from the detritus of modern life

Smelling out of the box

The US Army Natick Soldier Center in Massachusetts is attempting to make army rations more palatable by embedding savoury aromas in the food's packaging. The theory behind the mouthwateringly titled 'Active Package Olfaction to Increase Soldier Acceptance of Field Rations' project is that if the food smells better, then the troops will be more likely to eat it. The idea of improving its taste seems to have completely passed the scientists by.

Because pollution's worth it

Cosmetics giant L'Oréal has launched a new 'environmental' initiative. The company is working with the European Space Agency to track levels of ozone, carbon monoxide and UV radiation in major cities. Why? Because L'Oréal then plans to create moisturisers, shampoos, and face creams designed for use in the world's most polluted cities. The pollution won't get any better, but at least we can look great as we choke.

Et cetera

Most British motorists would rather eat their lunch in a lay-by or service station than drive a few minutes to find a more scenic spot, according to one new survey... Sheep sells for record £128,000... Armed robbers steal 300 grams of ox's gall-bladder stones from a Brazilian slaughterhouse... Some 614 students have enrolled in a state-wide programme in Florida that allows high-school students to take a physical education course - by computer... Women in New York are having their toes shortened so that they can fit into fashionably narrow shoes... Scientists in China have used cloning techniques to create hybrid embryos that contain DNA from both humans and rabbits... A clinic for shopping addicts has opened in Germany... Officials in Michigan have produced a brochure with a manure-scented scratch-and-sniff section that is aimed at educating would-be residents to some of the realities of rural living.

DON'T THEY KNOW WHO WE ARE?

Each month The Ecologist receives a range of PR materials from firms keen to promote their green credentials

THIS MONTH



'Barratt releases 400 protected lizards from hospital and takes them to the golf club,' so declared a press release sent to us by house builder Barratt Homes. 'We realised we had to act quickly,' said Barratt manager Karl Pickering. 'Once we knew the lizards had to be moved, we were going to finish the job come hell or high water.'

Only at the end of the press release did it take on a slightly different tone. 'Barratt... awaits the outcome of an appeal against the refusal of East Herts District Council to grant consent for 273 new homes in Bishops Stortford,' it added. The project had been rejected due to concerns over traffic and visual impact.

Other examples of Barratt's hell-or-high-water concern for the environment include: dumping 50 tons of illegal waste at a site in Lincoln; selling homes on a potentially contaminated site before being given the 'all-clear' by the Environment Agency in Thatcham; being fined £24,000 for dumping waste into the Lincoln (again) water supply; being fined £19,000 after claiming another contaminated site had been remediated when it hadn't; and illegal waste oil dumping into a river in Aberdeen.

CORPORATE CRIMES

\$700m...

is the fee Monsanto and its spin-off enterprise Solutia have agreed to pay to settle US state and federal lawsuits concerning five decades of polychlorinated biphenyl (PCB) pollution in Anniston, Alabama. From the 1930s to the 1970s Monsanto and Solutia used a plant in Anniston to produce PCBs, which are now banned in the US as they are linked to health problems ranging from learning disabilities to cancer. The settlement involves two separate trials and more than 20,000 plaintiffs, who accused the two companies of contaminating their bodies and properties with PCBs. Monsanto and Solutia will also have to fund community development, clean-up and remediation projects and an education trust in Anniston, as well as a clinic and research facility that will specialise in environmental medicine and provide some free medical care to local people.

\$54.5m...

is the largest fine ever in a lawsuit brought under the US's federal superfund law. The fine was awarded against mining giant WR Grace last month, and is intended to help cover the clean-up costs incurred by the US Environmental Protection Agency (EPA) at a WR Grace vermiculite mine in Libby, Montana. WR Grace will also have to pay the EPA's future costs for cleaning up hundreds of residential and commercial properties contaminated by the company's operations. Ultimately, the corporation may end up having to pay as much as \$110m.



No such thing as a poor lawyer



Class-action lawsuits are all the rage... especially among lawyers. In a \$350m settlement between communications firm AT&T and customers overcharged on telephone leases, lawyers received \$84m and the customers \$15 to \$20 each. In a settlement between retail giant Sears and customers with improperly balanced automobile wheels, lawyers got \$2.45m and customers \$2.50 a tyre. In a \$3.7m settlement between the Praise the Lord network of televangelist Jim Bakker (left) and 165,000 defrauded Christians, lawyers netted \$2.5m and each victim \$6.54. And in a settlement relating to price-fixing charges made against cosmetics manufacturers and retailers, lawyers got \$24m and each customer a free cosmetic.

GM failing in Spain

A new study published jointly by Friends of the Earth and Greenpeace demonstrates that the growing of GM crops in Spain is causing contamination of organic crops and leading to yields much lower than those that were forecast. The report is also highly critical of the Spanish government for failing to properly control or monitor the situation.

The impact of GM corn in Spain is available from the *Friends of the Earth and Greenpeace websites in both Spanish and English* www.tierra.org and www.greenpeace.org/espana_es

Farmed salmon blighted by PCB contamination

Farmed salmon carry far heavier loads of toxic PCBs than wild-caught ocean salmon, according to a report released by the Environmental Working Group. The US-based environmental research organisation found that salmon raised in high-density aquaculture pens contained up to five times more of the chemicals than wild salmon. And PCB pollution in Europe appears to be much worse than in North America. A farmed salmon from Canada contained PCBs at 25 parts per billion, while a fish from Scottish pens contained as much as 68 parts per billion.

Ozone hole growth slows

A new study reported in the *Journal of Geophysical Research* suggests that the global ban on ozone-destroying chemicals appears to be having some effect. Scientists at the University of Alabama have found that the growth rate of the ozone hole in the stratosphere, or lower atmosphere, has slowed by about 7 per cent per decade.

Summer Arctic ice to disappear this century

By the end of the century global warming will lead to most of the Arctic ice cap melting each summer, according to scientists working on the Arctic Ice Cover Simulation Experiment. The three-year European Community-funded study indicates that ice around the North Pole shrunk by 7.4 per cent in the past 25 years, with a record small summer coverage reported in September 2002. 'The summer ice cover in the Arctic may be reduced by 80 per cent at the end of the 21st century,' said Norwegian professor Ola Johannessen.

Real World Economic Outlook

Purpose:

Released to coincide with the IMF and World Bank's *World Economic Outlook*, this is the first of a series of annual reports on the global economy by

the independent 'think-and-do-tank' the New Economics Foundation (NEF). Each report will take a different theme. This year's focuses on debt.

Methodology:

The NEF says that its report will avoid the 'ideological rigidity and fixed belief systems' that characterise current orthodox economic thinking. The most rigid of all contemporary orthodoxies are the beliefs that the free market is infallible and that 'policies for attacking and subduing inflation must take priority over almost every other public-policy objective – including the redistribution of wealth'.

The report analyses the consequences of the global deregulation and empowerment of financial markets that has taken place over the past 30 years. And it identifies the three main 'pillars' of globalisation as being: the removal of restraints on the flow of money; the neutering of the state and national governments; and the striving to create a single global market in goods and services.

Key Findings:

- 1 Globalisation has not been driven either by corporates or technology. Its origins lie in the deregulation resulting from Washington's desire to finance its post-Vietnam budget deficit without making 'structural adjustments' to the US economy. This led US politicians, backed by the UK government, to lift controls on capital markets so that Washington could tap their resources to fund the deficit.
- 2 By 2000 financial assets of the five major economies were worth about three times the value of the real assets underlying them. In 1979 they were only 1.2 times the value. Japan's financial crisis was triggered in 1990, when the total stock of its financial assets began to outstrip GDP by 900 per cent.
- 3 Globally, there is currently \$100 trillion of debt but only \$33 trillion of income. Nine tenths of this debt is in the developed world.

- 4 In the UK, total lending to consumers increased by 41 per cent between 2001 and 2002. In 2002 total borrowing by UK consumers hit £68 billion. Debt is now, on average, 120 per cent of disposable income.
- 5 On a net basis, capital is now flowing from the South to the North. In 2002 developing countries transferred a total of \$48.3 billion to the North, more than offsetting the flow of aid from North to South of \$33 billion.
- 6 The chances of widespread financial crisis are rising rapidly. When debt-default rates reach 1 per cent, bank profitability is put at risk. When default rates reach 2 per cent, the chances of financial crisis increase substantially. The first of these benchmarks has already been passed.

Predictions:

- A further collapse in the credit system in the developed world, starting in the US, will lead to soaring personal and corporate bankruptcies.
- Europe will continue to experience low growth because of the region's neo-liberal policies, most notably the eurozone's Stability and Growth Pact.
- East and South Asia will continue to experience deflation.
- South and Central America will continue to experience economic stagnation and decline.
- The outlook for all regions of Africa is grim.

Recommendations:

The 'three pillars of globalisation' need to be replaced urgently.

- 1 Financial markets should be tamed through the re-introduction of capital controls, restraints in the growth of credit and the establishment of an international clearing agency and a 'Tobin tax' on currency sales.

- 2 The state should stand up to corporations, with governments empowered to respond to what their electorates desire.

- 3 The global market should be scaled down/localised, by introducing an international trading system based on the concept of appropriate scale.

To obtain a copy of *Real World Economic Outlook* (Palgrave Macmillan 2003, hardback £50, paperback £16.99), visit www.palgrave.com/rweo or contact Palgrave orders on +44 (0)1256 302866

NEWS Behind the headlines

Balfour Beatty

The story so far... In what is being hailed as validation for the UK government's private finance initiative, PFI specialist Balfour Beatty made a pre-tax profit in the first half of 2003 of £51m. Solomon Hughes describes the deaths, million-pound fines and allegations of bribery that could do nothing to dent the company's success

New Labour must be happy?

And so are plenty of other people. Not least a lot of Tories. This May Viscount Weir, a former Tory peer in the pre-retorm House of Lords, retired as Balfour Beatty chairman after 26 years on its board. The firm's strong links with the Conservative Party have done it no harm at all. In 1989 Margaret Thatcher personally promised financial support for the firm's Pergau Dam scheme in Malaysia, a project which linked aid to arms sales.



Balfour Beatty's work on the Conservatives' road-building programme, which used a financial structure similar to that of the PFI, gave it a lead when Labour introduced its new funding system. In turn, the PFI has transformed Balfour Beatty from a construction firm to a services giant. The results for staff and patients at hospitals like the Edinburgh Royal Infirmary have been bed and budget cuts. Labour twice asked Balfour Beatty executive Malcolm Bates to redesign the PFI so it would be more attractive to corporations. In 1999 Labour made Bates the head of London Transport. His job involved privatising the London Underground. Metronet, a consortium led by Balfour Beatty, now controls around two thirds of the underground.

It must have a good track record then?

Not exactly. Balfour Beatty faces a charge of corporate manslaughter relating to the Hatfield train crash just north of London.

Once the Conservatives had privatised the UK's national rail network, the new private rail operator Railtrack was more interested in real-estate deals than maintaining the rails. It subcontracted the maintenance work to engineering firms, including Balfour Beatty.

Critics charge that while the contractors chased profits and argued over responsibility, the track itself fell into disrepair. The grim proof of these accusations came at Hatfield in October 2000, when a train travelling from Leeds to London crashed off broken rails. Four passengers died and 87 were injured.

Balfour Beatty had been warned in the April before the crash that the rails were worn and needed repair to avoid the danger of derailment, but arguments about money and responsibility held up the work. The firm vigorously denies the manslaughter charges, saying '[We see] no justification for manslaughter charges to be brought against our maintenance business or its former employees. The charge of manslaughter will be firmly defended, as we see no plausible basis for it in law or on the evidence'.

What's its safety record like?

In 1999 Britain's Health and Safety Executive (HSE) fined the firm £500,000

for causing a train derailment in Rivenhall, Essex, two years previously. This is the sixth largest fine ever levied by the HSE. The judge described it as a 'clear warning' to contractors. Britain's chief rail inspector called the fine a 'strong safety message'. The Hatfield prosecution, which might not start until next July, will show whether this message got through to a firm that makes £118m in profits a year.

In 1995 the HSE fined Balfour Beatty £1.3m (the second largest fine in the HSE's history) because its negligence caused a massive tunnel collapse at Heathrow Airport. The incident was described by the judge as 'one of the worst civil engineering disasters in the UK in the last quarter of a century'.

Any other charges we should know about?

Balfour Beatty faces prosecution for bribery in Lesotho, where the firm helped build the Highland Water Project (HWP) in the 1990s. The HWP has involved the construction of six massive dams, the water of which will be sold to Johannesburg.

The problem is that the official in charge of the project, Masupha Sole, took \$1.1m worth of bribes from multinationals looking for preferential treatment. A Balfour Beatty consortium, the Lesotho

Highlands Project Contractors, stands accused of paying Sole \$57,269 between 1991 and 1994.

The HWP was funded by the World Bank, which is threatening to blacklist any firms convicted of corruption. Exclusion from World Bank projects would be a serious blow to Balfour Beatty, which denies the charges. But last May Sole was found 'guilty as charged' of receiving money from the Balfour Beatty consortium. Prosecution of the firms who offered Sole his bribes is proceeding slowly, but the two firms who have appeared in court so far were found guilty.

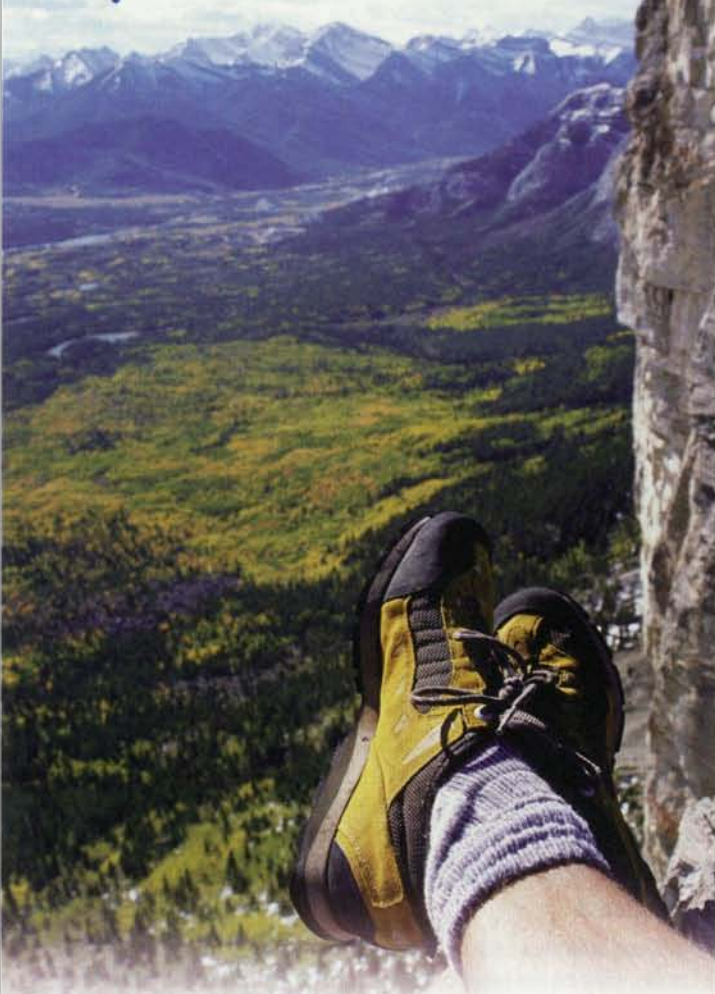


Must be quite a company to work for?

That depends. In June 1995 Highlands Project Contractors de-recognised the Construction and Allied Workers' Union of Lesotho, which represented the dam builders working on the HWP. In September 1996 some 2,000 workers went on strike. They said the management was racially discriminatory because local workers received less pay than foreigners. The consortium went to court, had the strike declared illegal and evicted the strikers from their work camp. The strikers then marched through the streets and refused to leave their accommodation, so the police were called to enforce the court order. They carried out the evictions by shooting 15 strikers dead and wounding several more. Some 500 of the strikers took refuge in a local Catholic church. Political protests following the shooting forced the consortium to re-employ the strikers and recognise the union. The consortium also agreed to pay humanitarian compensation of \$6,600 to the families of the dead workers, but did not accept responsibility for the deaths. After the killings the contractor's spokesman David Darcy told the South African press: 'We like to think of ourselves as a progressive employer.'



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Letters

Health

In the 1930s US dentist Weston Price travelled the world to study the diets of 'primitive' peoples. He found a startling lack of disease and proof that a system of environmentally friendly local food production is the best way to ensure human health. By Sally Fallon

nasty, brutish & short

Price found that 'healthy primitives' were invariably (cheerful and optimistic) and showed 'physical development'.

...the diets of 'primitive' peoples. He found a startling lack of disease and proof that a system of environmentally friendly local food production is the best way to ensure human health. By Sally Fallon



...the diets of 'primitive' peoples. He found a startling lack of disease and proof that a system of environmentally friendly local food production is the best way to ensure human health. By Sally Fallon

LIES, DAMN LIES...

Well, I never thought I would find myself writing to *The Ecologist* in defence of the RSPB, an organisation that advocated the extermination of hedgehogs in the Hebrides for no other reason than the fact that hedgehogs like bird eggs and were put on the islands by humans. However, Malcolm Tait's 'Cat got your tongue?' (September 2003) is so absurd and malicious it demands a response. Tait juxtaposes two numbers conjured from the air: the number of cats, and the number of birds they kill annually. (Strangely, while he recognises that we don't really know the former he does not question how we can possibly know the latter).

My cats don't kill birds, despite my trying to persuade them to 'do as cats do', as Tait puts it. They are content to subsist on the food I provide, and sleep in the occasional sun with one eye half open watching the blackbirds close by. My neighbours and I feed the birds, especially in winter and spring. So, they are maintained well above the natural carrying capacity. My observation, of course, proves nothing one way or the other but is at least as 'scientific' as Malcolm Tait's armchair punditry.

I've been pleased to see *The Ecologist's* good political analysis. Readers deserve to be presented with equally good 'ecology'. By the way, I'm a long-term member of the RSPB, the Mammal Society and Cats Protection.

Sidney J Holt, Crickhowell, Wales

GET YOUR FATS RIGHT

While I generally enjoy your many thought-provoking articles, Sally Fallon's article on

primitive diets ('Nasty, brutish & short', July/August 2003) was misleading at best.

Contrary to Fallon's supposed 'myths about traditional diets', an extensive body of research on paleolithic and neolithic diets acknowledges that early man ate a diet rich in animal proteins and fats. However, the fat was not highly saturated. Fat in wild game and seafood is rich in poly- and mono-unsaturated fats – particularly omega-3 fatty acids, which are quite low in the modern diet. Omega-3 fats are associated with a number of health benefits, while numerous clinical studies support links between saturated fats and adverse health outcomes (elevated blood cholesterol, increased risk of heart disease, etc).

Prior to agriculture (10,000 years ago), grains played a minor role in the diet, dairy played no role. Grasses were not abundant until climatic changes occurred about 20,000 years ago; hunter-gatherers did not have the ability to process them effectively. Thus, dairy and grains are very recent additions to man's diet, and not something we have evolved with.

I certainly agree with some of Fallon's conclusions. We should, for example, eat more whole, minimally processed foods (fruits, vegetables, nuts, whole grains, etc). But I would caution against the implicit advice to eat lots of fish and meat as our ancestors did. Not only are domesticated meats nutritionally inferior (wrong type of fat) to wild game, but – more importantly – modern fishing and meat production methods are highly detrimental to the environment. We don't all need to become vegetarians, but we should be eating much less meat for the sake of the environment.

Garry Auld, Colorado, US

MINED... THE GAP

The four pages you devoted to the Grasberg mine in West Papua ('The penis gourd revolution', September 2003) are to be welcomed. However, it's disturbing that a British magazine makes no mention of the role played by Rio Tinto in financing and managing this deadly enterprise.

While suffering from severe cash-flow problems in 1995, Grasberg's owner – the US-based firm Freeport McMoran Copper and Gold (FCX) – benefited from a \$1.8 billion investment from the British company. As a result, Grasberg doubled its output (and its waste dumping), while Rio Tinto became FCX's single biggest shareholder.

Rio Tinto also secured a 40 per cent chunk of future production at Grasberg and two directorships on the FCX board. The partnership has proved essential to major new encroachments on indigenous territory in Papua – not to mention into the World Heritage-listed Lorentz National Park.

Your omission is all the more regrettable considering that, since the late 1990s, virtually every NGO campaigning on Grasberg has adopted the term 'Freeport/ Rio Tinto' to denote the true level of corporate (ir)responsibility at what, by any yardstick, is the world's most devastating mine.

Roger Moody, People Against Rio Tinto and its Subsidiaries (Partizans) (www.minesandcommunities)

NIL BY MOUTH

I agree with Nick Reeves' ('Letters', September 2003) that it would be very wrong for the government to force water companies to add the chemical fluoride to water supplies. It isn't natural calcium fluoride that will be added but hexafluorosilicic acid toxic waste from factories. This is registered as a poison under the 1972 Poisons Act, and is contaminated with mercury, arsenic and lead. It isn't even pharmaceutical-grade like that added to toothpaste.

Health minister Hazel Blears says people who don't want fluoride can remove it or buy bottled water. But bottled water is heavy to carry and creates masses of plastic waste. It would have to be used for cooking, too, because fluoride gets more concentrated when fluoridated water is boiled. All foods made or cooked with water would contain it.

A jug filter won't remove fluoride. Removing the chemical would require an expensive distillation machine or a plumbed-in reverse osmosis unit costing hundreds of pounds. Surveys show around 95 per cent of the public are against fluoridation. But even if a majority did want fluoride, it would still be a breach of medical ethics if the minority were forced to drink it against their will.

Ann Wills, Middlesex, England

MISGUIDED MONBIOT

The weakness in George Monbiot's argument (September 2003 debate) is the competitive element of capitalism and trade. It's all very well fairly traded coffee producers undercutting each other to make a living but what if consumer tastes

change away from coffee...where does it leave the small ethical coffee producers?

And the answer to Oxfam's concern about vast urban slums is

surely to give them their land back rather than employ them in factories doing soulless repetitive work.

The beauty of localisation is that it would encourage a low-tech, manual and diverse way of life, something the green technology proponents seem to forget. Would the leaders of Greenpeace or F.O.E like to spend their days assembling eco fridges or low energy light bulbs?

John Rogerson, Lockerbie, Scotland

Send letters for publication to: *Letters, The Ecologist, Unit 18 Chelsea Wharf, 15 Lots Road, London SW10 0QJ. E-mail: editorial@theecologist.org* *The Ecologist reserves the right to edit letters as necessary*

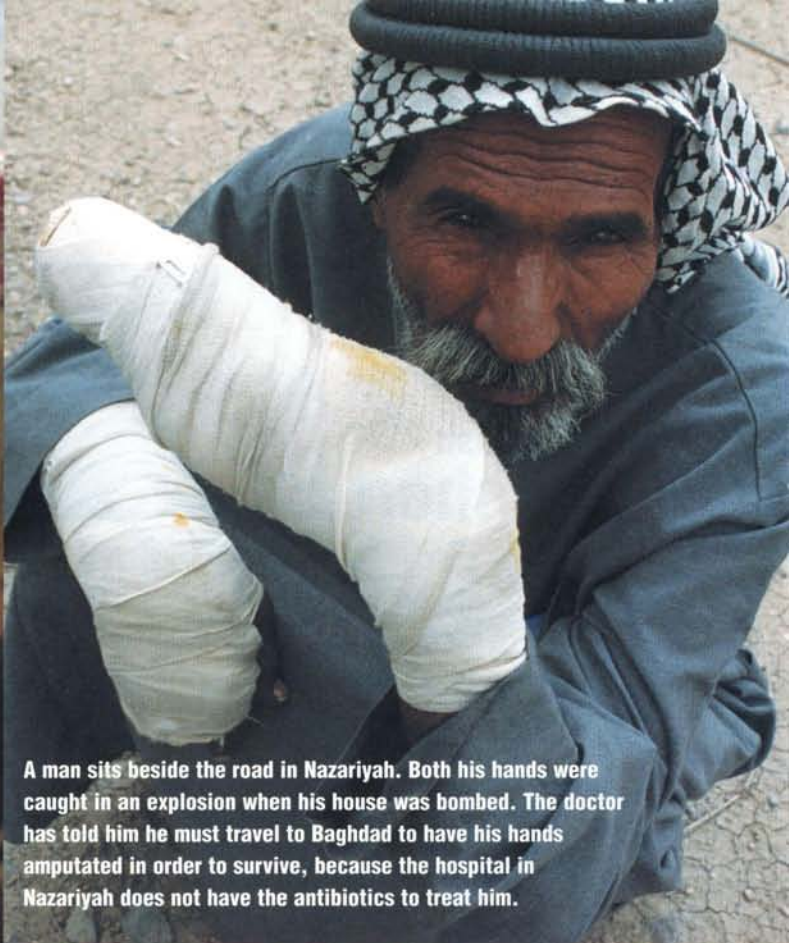


The penis gourd revolution

...the diets of 'primitive' peoples. He found a startling lack of disease and proof that a system of environmentally friendly local food production is the best way to ensure human health. By Sally Fallon

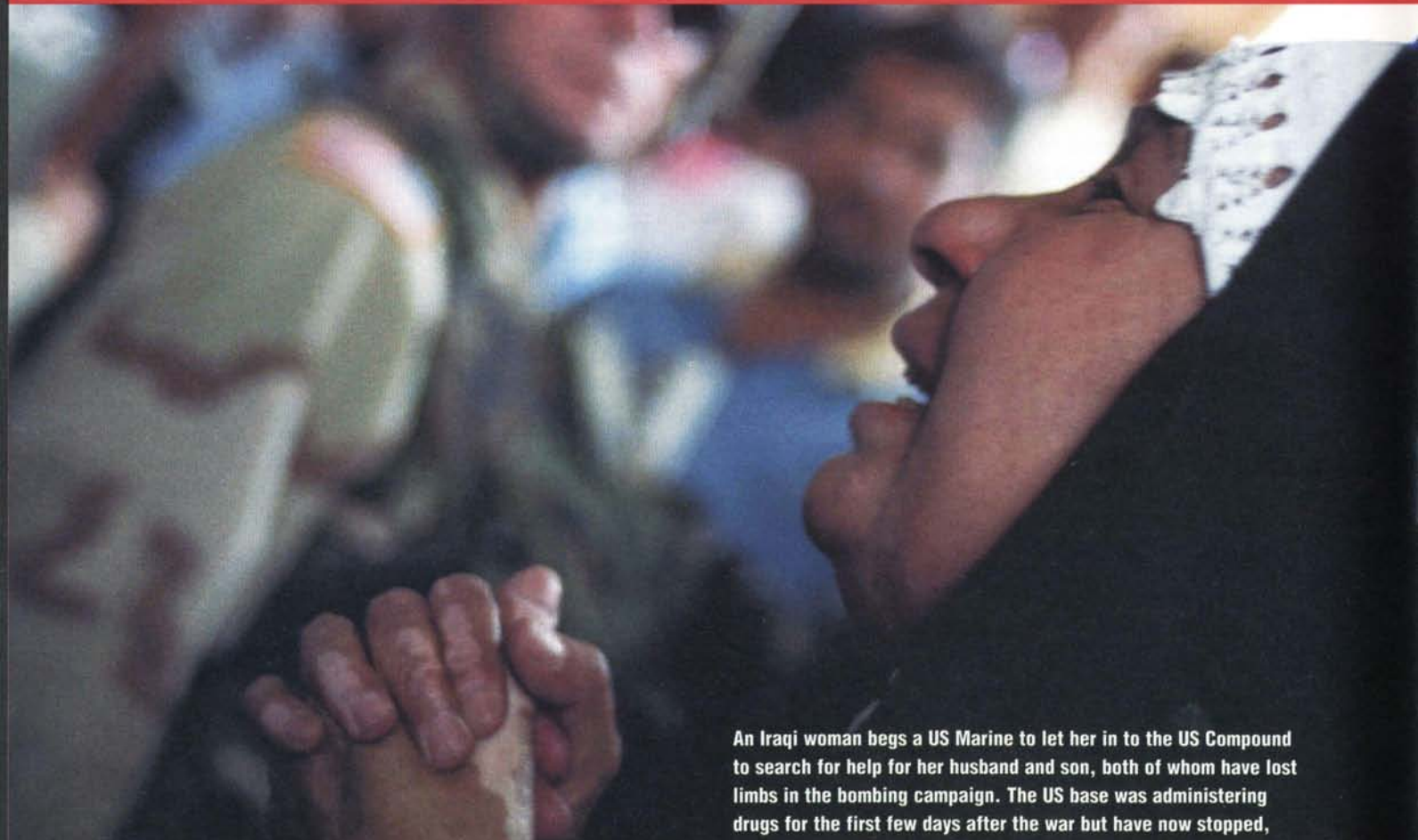


A father cries beside the bed of his son, caught in a cluster bomb explosion. Nazariyah.



A man sits beside the road in Nazariyah. Both his hands were caught in an explosion when his house was bombed. The doctor has told him he must travel to Baghdad to have his hands amputated in order to survive, because the hospital in Nazariyah does not have the antibiotics to treat him.

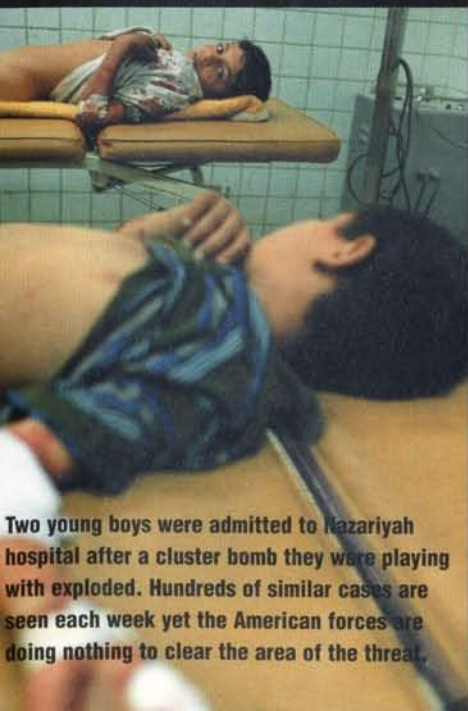
In June 2003 Lockheed Martin was awarded a \$40 million contract for the development and testing of an extended range version of its Wind Controlled Munitions Dispenser (WCMD) cluster bombs following 'our successful WCMD that performed so well in both Operation Enduring Freedom and Operation Iraqi Freedom.' The corporation reported 2002 sales of \$26.6 billion.



An Iraqi woman begs a US Marine to let her in to the US Compound to search for help for her husband and son, both of whom have lost limbs in the bombing campaign. The US base was administering drugs for the first few days after the war but have now stopped, even though hospitals still don't have enough to cope with demand.



A mother grieves over the death of her young boy, aged 6, who was killed while playing with an unexploded cluster bomblet. Nazariyah.



Two young boys were admitted to Nazariyah hospital after a cluster bomb they were playing with exploded. Hundreds of similar cases are seen each week yet the American forces are doing nothing to clear the area of the threat.



Mohammed had three fingers of his hand blown off when the market place in Nazariyah was bombed. There are no antibiotics in the hospital to treat the wounds and the doctor thinks his hand will have to be amputated.

The beak shall inherit the earth

In 1995 the launch of the Discovery space shuttle was delayed by woodpecker-inflicted sabotage. Could February's shuttle disaster have been caused by the same birds?

In early 1995 the Nasa space shuttle Discovery was delayed from taking off by none other than our friend the woodpecker – two of them, in fact. It seems that the woodpeckers chose the weekend of the shuttle's launch to begin a clandestine assault on Discovery, tearing great chunks of the craft's fuel tanks' insulating-foam shell away.

The final hole count was 195 – some of the holes being four inches in diameter. Quite a weekend's work. As the final countdown to take-off commenced, five days after scheduled, the shuttle team was played Woody Woodpecker's characteristic chatter by a mischievous ground-control team.

The incident led the Kennedy Space Centre (KSC) in Florida to set up the Bird Investigation Review and Deterrent (Bird) team, which published a report a month later with some quite significant findings.

KSC spokesman Bruce Buckingham said: 'After consultations with leading ornithologists and wildlife experts, Bird concluded that migratory northern flicker woodpeckers were attempting to excavate a cavity in the external tank because they may have lost a nest or roost cavity.



If a nest is overtaken before the female can lay her eggs, the pair becomes desperate for a nest... This may explain the unusually aggressive behaviour of the flicker pair that damaged the tank.'

Bird suggested a three-phase defence plan to prevent similar woodpecker attacks. Phases one and two involved establishing 'an aggressive habitat-management programme' and 'scare and deterrent tactics'. Phase three centred on the formal implementation of bird-sighting response procedures. Little wonder the yaffles are mad, then.

On Saturday 1 February this year the shuttle Columbia broke up soon after re-entering the earth's atmosphere, tragically killing all seven crew on board. Nasa lost contact with the craft about 15 minutes before it was due to land at KSC.

Nasa administrator Sean O'Keefe told a news conference that there was no indication that the disaster had been caused by anything or anyone on the ground.

Some early reports, however, suggested that birds had been seen flying away from the shuttle some time before take-off. These reports have not been confirmed by Nasa.

The independent board investigating the Columbia disaster has indicated that super-heated gas entered through a small hole in the front edge of the left wing and melted it from the inside out.

The cause of this hole now appears to have almost certainly been a piece of loose foam striking the wing during lift-off. The same foam, oddly enough, that the woodpeckers had developed a penchant for in 1995.

'We're not drawing any conclusions,' said a spokesman for the investigation board. 'We've got to analyse... and evaluate all the data before we can draw any conclusions.' (The spokesman's name, incidentally, is lieutenant colonel Woody Woodyard.)

Gavin Shelton is a freelance journalist

Bushisms

'Our country puts \$1 billion a year up to help feed the hungry. And we're by far the most generous nation in the world when it comes to that, and I'm proud to report that. This isn't a contest of who's the most generous. I'm just telling you as an aside. We're generous. We shouldn't be bragging about it. But we are. We're very generous.'

Washington DC, 16 July

'Security is the essential roadblock to achieving the road map to peace.'

Washington DC, 25 July

'We had a good cabinet meeting, talked about a lot of issues. Secretary of state and defence brought us up to date about our desires to spread freedom and peace around the world.'

Washington DC, 1 August

'I'm a follower of American politics.'

Crawford, Texas, 8 August



In the belly of the whale?

It is apathy, not ignorance, that is killing the planet

A few weeks ago Iceland resumed slaughtering whales. The stated reason was to assess the effects of whales on cod fisheries. Recovery of whale populations could, we were told, threaten the profitability of the country's fishing industry. So, the plan is to cut open whales' stomachs to see how many fish they've eaten. Whale meat not used by scientists in the 'research programme' will be sold commercially in Iceland, mainly to high-end restaurants.

The arguments are stupid. How do these people think cod flourished alongside the whales before the help of friendly industrial whalers and fishermen? We already know that 200 years of commercial whaling have reduced whale numbers by 99 per cent. And we know that after a 17-year respite from whaling, the population of humpback whales in the north Atlantic has rebounded



I don't hear many calls for boycotts of Japan. Could that be because Japan is a more important trading partner than Iceland? God forbid

from about 3,000 to 10,000 (which sounds great, until you realise that prior to the arrival of industrial civilisation and its whalers, the population was about 240,000 whales). We also know that other species have been similarly hammered. Minke whales – the whales the crews from Iceland are killing as you read this – have declined by at least 50 per cent.

Here is what else we know. If the scientists in Iceland want to discover why fisheries are collapsing, they need only open the paper. The killing of the oceans has gotten extreme enough that even the corporate press is forced to acknowledge it – albeit on page 13 (and taking up about one-fourth of the page, with the rest devoted to an ad for the new PCS Vision™ Picture Phone with BUILT-IN Camera).

Take *The Washington Post*, which earlier this summer reported: 'Industrial fishing practices have decimated every one of the world's biggest and most economically important species of fish... Fully 90 per cent of each of the world's large ocean species, including cod, halibut, tuna, swordfish and marlin, have disappeared from the world's oceans in recent

decades... Fishing has become so efficient that it typically takes just 15 years to remove 80 per cent or more of any species unlucky enough to become the focus of a fleet's attention.'

I read this to my friends, who responded as one: 'I thought we knew this already.'

We do, but then we know lots of things already. We know we are members of a culture hell-bent on destroying the planet, and we know we are members of probably the last generation who will share this planet with living forests, living rivers, living oceans. We know the problems we face are not and have never arisen from a

lack of accounting methodologies or industrial know-how (knowing how many fish the murdered Minkes ate will not save the cod).

The problems are denial, recalcitrance and apathy. The problem is our entire way of living and relating to the world. The problem is that we know all this but carry on regardless.

We trot out our technical solutions. Maybe we could boycott products from Iceland, or boycott the country itself. And while we're at it, we could boycott Norway and Japan, too, since they also slaughter whales. Although I have to admit, I don't hear many calls for boycotts of Japan. Could that be because Japan is a more important trading partner than Iceland? God forbid.

What is it that we really want? Do we want a world with reductions of whale and fish populations by 70 and not 90 per cent? A world where only 90 per cent of the ice caps disappear, and not all of them? A world where only 90 per cent of all streams are contaminated with carcinogens, and not all of them?

I cannot speak for you, but that is not enough for me.

Derrick Jensen's most recent book is *The Culture of Make Believe* (Context Books, 2002)



'I think this is the worst government the US has ever had in its more than 200 years of history. It has engaged in extraordinarily irresponsible policies, not only in foreign policy and economics but also in social and environmental policy. This is not normal government policy. Now is the time for (US) people to engage in civil disobedience. I think it's time to protest – as much as possible.'

2001 economics Nobel laureate George A Akerlof

'We need to face the fact that our dangerous and unsustainable consumption of oil from a highly unstable part of the world is similar in its consequences to all other addictions. As it becomes worse, the consequences get more severe and you have to pay the dealer more.'

Former US vice-president Al Gore

'Refusing to call greenhouse-gas emissions a pollutant is like refusing to say that smoking causes lung cancer. The earth is round. Elvis is dead. Climate change is happening.'

Melissa Carey, climate policy specialist for the US NGO Environmental Defense, responding to the news that the US Environmental Protection Agency has declared that carbon dioxide – the chief cause of global warming – is not a pollutant

'If you are what you eat, it seems the average consumer consists mostly of thickener, water, salt and sugar.'

The Australian



'There are more humans than all of the rabbits on earth. There are more of us than all the wildebeests, than all the rats, than all the mice.'

We are the most numerous mammal on the planet. But, because we're not like rabbits or rats or mice, we have technology, we have a consumptive appetite, we have a global economy. We are now like no other mammal that has ever existed. And it's time for us to sit back and start saying: "Wait a minute. Now, yes, we've got a very productive economy, but what are we doing in terms of our grandchildren and their grandchildren?"'

Canadian biologist David Suzuki (pictured)

A series of poems carved from the words and wisdom of Donald H Rumsfeld, the US secretary of defence



THE UNKNOWN

*As we know,
There are known knowns.
There are things we know we know.
We also know
There are known unknowns.
That is to say,
We know there are some things
We do not know.
But there are also unknown unknowns,
The ones we don't know we don't know*

**US Department of Defense news briefing,
12 February**

NOT WELL

*We're not doing that well,
And, of course, the reason is
It's not an even playing field.
We're a democracy,
And they're a dictatorship.

So they control their ground,
And they manage the press,
And they lie repeatedly.
And we don't manage the press,
We don't lie.

No, we don't at all.*

Interview with CNBC, March 6

Rules

*Anything that I say
That I shouldn't have
Is off the record.
I want you to
Understand that
Right now, up front.*

**Interview with the Washington Post
12 January 2002**

Poems taken from *Pieces of Intelligence: the existential poetry of Donald H Rumsfeld*, edited by Hart Seeley (Simon & Schuster 2003, £8.99)

MALCOLM TAIT

Cliffe hanger

Whether it's at the Royal Courts of Justice or on the north coast of Kent, Tony Blair's government is masterful at pooling the wool over our eyes

By the time you read this we may know far more, but from where I'm sitting those '45 minutes' might yet turn out to be a long time in politics. Will defence secretary Geoff Hoon still be in place? Did Tony Blair know of the proposed naming of Dr David Kelly? And, most importantly, was the Ministry of Defence responsible for Blair's official spokesman calling Dr Kelly a 'Walter Mitty-type fantasist', who...

Oh, who am I kidding? Alastair Campbell only appeared irreplaceable because he liked to make it look that way. Hoon is just another of those 'here today, gone tomorrow' politicians that Margaret Thatcher liked to use as throwaway bullet-shields in her days of pomp. Frankly, the only good thing that might come out of the Hutton inquiry is that Dr Kelly's family might gain some truths with which they may be able to rebuild their lives.

While all this goes on and weeks turn into months as the inquiry, press and politicians attempt to apportion blame for Dr Kelly's apparent suicide, the very real and undeniable fact that Britain illegally invaded Iraq disappears off our radar screens. We've been lured away from the true story by a series of red herrings and stalking horses.

We should have seen it coming, for this particular style of drawing fire is not new to this government. One of the biggest distractions for environmental campaigners in recent years has been bobbing around on the north Kent coast for many, many months now – attracting vast media attention and munching its way through huge wads of campaign funds. The planned airport at Cliffe in the Thames Estuary is, I believe, one of the reddest herrings this government has ever launched.

I say red herring, but it's more like a decoy duck. One of the reasons campaigners have been up in arms about the Cliffe proposals is that the area is a

main gateway for thousands upon thousands of migratory birds every spring and autumn – not to mention a haven for waterfowl who live and breed there.

The region houses no fewer than four Special Protection Areas (SPAs), designated under the EU Birds Directive as the most important places for birds in the European Union. Between them the SPAs play host to 200,000 waterfowl. These sites, which are also wetlands of global importance listed under the Ramsar convention, would be irreparably damaged by the new airport – as would many other less well-known sites. The RSPB has forwarded to transport secretary Alistair Darling a list of 150,000 signatories clamouring for him to change his mind, and it has raised over £850,000 in its campaign to fight the plan.

There's more. According to conservative estimates, no fewer than 2,000 homes would be lost because of the airport, and the transport links needed to carry passengers to and from Cliffe would likely

cause an even greater upheaval over their years of construction.

Meanwhile, air traffic controllers – including no less an authority than National Air Traffic Service chief executive Richard Everitt –

Geoff Hoon is just another of that here-today-gone-tomorrow type of politician that Thatcher used as bullet-shields in her pomp



have complained that the planned increase in air traffic at Cliffe would create a blockage in air space. 'The stark reality we then face,' said Everitt, 'is either to close or to severely limit capacity at one of the other London airports.'

If that's not enough, try this. While many campaigners are worried about what effect the planes might have on the birds, a recent study by the British Trust for Ornithology (BTO) took a look at the effect the birds might have on the planes. It concluded that in a region where tens of thousands of geese and swans ply their trade every day the risk of bird-strike would be higher than at any other UK airport. Who commissioned the report? Alistair Darling.

In short, the north coast of Kent is probably the worst place in the country for a new airport. So, what on earth is the government thinking? An airport that no one wants, that would be poorly connected to London for years to come, that contravenes a host of international conservation legislation, that would actually reduce the efficiency of existing London airports, and that would be more in danger from bird-strikes than virtually anywhere else? Is it trying to out-folly the Millennium Dome?

No, for here lies the craft. Airport company BAA, which has no interest in Cliffe, is urging the government to open three new runways in London and put aside land in Glasgow or Edinburgh for further development. Some airlines support this plan, seeing no future in Cliffe either. The government, which has been conducting a 'public consultation' on proposed new runways, is expected to launch a white paper on the subject within a few months. The consultation is based on the premise that air travel in this country is expected to increase by 4 per cent per year for the next 30 years.

The scene is set. The government will 'drop' its plans for Cliffe. 'We've taken the public and the industry views on board,' it will say, 'and decided to modify our plans for national airport expansion, merely adding a few runways to existing airports. You see? We do listen.'

Local campaigners will still have fights on their hands, but national campaigners will believe they've won a major victory. 'Well, at least we saved Cliffe.' The air industry will have its growth, and the government won't have to worry about air tariffs, fuel taxes and all the other reasonable measures that might actually combat the increase in air traffic.

Cliffe airport will be the government's, and the air industry's, perceived concession to campaigners. It was always intended to be. Some time in the near future, we'll be standing around clinking our celebratory pints and saying: 'Well, we got rid of both Cliffe airport AND Geoff Hoon. You see, we CAN outsmart Blair's government when we want to.'

And far above us, yet another unwanted plane will be carrying our troops to yet another unwanted war.

Malcolm Tait is the former managing editor of *The Ecologist*

Free market economics (is) for dummies

NUMBER 2 • DEBT

Andrew Simms examines debt – something generally associated with 'feckless' Third World nations, but which, like so much else, was invented in Britain and taken to a whole new level by our friends in the New World



A debt is something you have to pay back, right? Wrong. Debts only have to be paid back if you lack either power or strategic importance. Britain, for example, still has an unpaid debt of around \$14.5 billion owed to the US from WW1. The last payment was made in 1934.

Look back a little further and we see that England was one of the first countries to default on international loans right back when Italy was inventing the precursors of modern banking. In the 14th century Florentine banks lent money to Edward I to finance his wars against the French. When it was time to repay in 1327 Edward declined.

As a result, the Bardi and Peruzzi banks collapsed. Add another century and the Medici bank, in spite of the family's 'colourful' reputation, had to swallow the bad debts of Edward IV.

For several centuries religious principles had held debt in check in the Western world. Lending and charging interest payments were considered morally wrong by the Christian church. Usury was high crime. But as trade increased during the Renaissance more people had need to borrow. In the words of JK Galbraith, 'religious scruples yielded in normal fashion to pecuniary advantage'. It's been downhill ever since.

Christian objections were won round by the argument that money was a productive asset in the same way that a cow or woodworking tools were. If someone lent you money, they missed out on the benefits they could get from that money and should be compensated. It mattered less at a time when cash was not the dominant form of exchange. Now it matters a lot.

In the last half-century the strategically important friends of rich and powerful countries have had their debts written-off, while poor, strategically unimportant countries have been bled dry to repay their (often illegitimate) 'debts'.

Germany was given post-war debt relief in 1953 that was around four times more generous than that

offered to the least developed countries in Africa during the 1990s. After general Suharto's 1965 military coup, Indonesia got hefty debt relief. Egypt was similarly well treated after the Gulf War, as was Poland

during the death throes of the Cold War. Others have been less fortunate. In 1997, the Archbishop of Cape Town Njongonkulu Ndungane said: 'The external debt of developing countries has become an eternal debt.'

'Blessed be the young, for they shall inherit the national debt.' Former US

president Herbert Hoover's words are more relevant than ever now that the US national debt – the world's biggest – surpasses \$5 trillion. If it wasn't for the free ride gifted to the holder of the world's reserve currency – and the way this means it can borrow low and lend high – the US would be up a stinking creek with no method of propulsion.

But we shouldn't gloat over the US bubble economy. We should worry. According to the New Economics Foundation's new report *The Real World Economic Outlook 2003* the huge growth of assets in the US over the last two decades has gone to a tiny, rich minority. The enormous debts that keep the economy going, however, have been racked up by the poor.

Ironically, it is an unpayable debt crisis in rich countries that could now be about to bring the global economy down. In *Liar's Poker: two cities, true greed*, his classic account of excess in the 1980s money markets, Michael Lewis revealed how we fell for macho corporate bluster. 'The takeover specialists did for debt what Ivan Boesky did for greed,' Lewis wrote. 'Debt is good, they said. Debt works.' All nonsense, of course. Now, I predict an imminent revival of Dario Fo's classic play *Can't Pay, Won't Pay*.

Andrew Simms is policy director of the New Economics Foundation (www.neweconomics.org)



Letter from America

BY WILLIAM BLUM

Greenspan fingered

If you think the man who runs US politics is simple, you should see the guy in charge of the economy

He can pass for none other than Chauncey Gardener, the main character of the book and film *Being There*. Gardener was a simple man with very simple thoughts and behaviour, who might well have been considered to be borderline retarded. But fortuitous circumstances and the deference shown to him by individuals with insufficient intellect and/or courage resulted in him being thought brilliant by people in high positions.

I am talking of Alan Greenspan – the head of the US Federal Reserve, an institution that influences the US banking system in various significant ways, the most well-known of which is to lower or raise the prime interest rate.

selfishness guru Ayn Rand (who turned emulating two-year-olds into a philosophy of life), replied: 'Congressman, we have the highest standard of living in the world.'

'Wrong,' said Sanders, 'Scandinavia has a higher standard of living.'

Unaccustomed to having to defend any of his profundities, Greenspan could do no better than counter with: 'We have the highest standard of living for a country of our size.'

This was quite a comedown from 'in the world'. It should be noted that the only countries of equal or larger size to the US are China and India.

The US is the worst place in the developed world to be a worker, or sick, or seeking a university education, or – given that the US has a prison population of 2 million people – a defendant

During the past few years Greenspan has ordered the rate lowered about a dozen consecutive times, each instance supposedly to give a boost to a sluggish economy. The fact that he's had to repeat the exact same measure a dozen times in a row gives you an idea of how effective his policy has been. But even as the US economy continues its downward spiral, it's rare indeed that anyone in the media or government dares to criticise Greenspan. The man has achieved sanctity.

Thus it was both remarkable and welcome that one member of Congress had the nerve to publicly take Greenspan to task. In July Bernard Sanders of Vermont, the only independent in the House of Representatives, faced Greenspan across the table at a congressional hearing and said: 'Mr Greenspan, I have long been concerned that you are way out of touch with the needs of the middle class and working families of our country, that you see your major function as the need to represent the wealthy and large corporations. I think you just don't know what's going on in the real world.'

Country clubs, cocktail parties, millionaires and billionaires are not the real world, Sanders said. In the real world the US has lost 3 million jobs in two years, the national debt is ballooning, people are losing healthcare and seniors can't pay for prescription drugs, bankruptcies are on the rise and CEOs make 500 times what their workers earn, the US manufacturing sector is shrinking and US workers are losing out to workers overseas. 'Do you give one whit of concern,' asked Sanders, 'for the middle class and working families of this country?'

Greenspan, a friend and devoted follower of

But the idea that the US does have the highest standard of living in the world is actually believed by a large number of grown-up Americans, and most of them believe that this 'highest standard' applies across the board.

They're only minimally conscious of the fact that whereas they make extremely painful sacrifices to send their children to university and those children will be very heavily in debt for years afterward, university education is either free or eminently affordable in much of Western Europe. The same is true in Cuba, and was the case in Iraq under Saddam Hussein.

The same lack of awareness about superior conditions in other countries extends to healthcare, working hours, vacation time, maternity leave, unemployment insurance and a host of other social and economic benefits.

In short, the US is the worst place in the developed world to be a worker, or sick, or seeking a university education, or – given that the US has a prison population of 2 million people – a defendant.

To which the Chauncey Gardeners of the US, including the one in charge of the Federal Reserve and the one sitting in the Oval Office, would say 'Duh! Whaddaya mean?'

William Blum is the author of *Rogue State: a guide to the world's only superpower* (Zed Books, 2002) and *West-Bloc Dissident: a Cold War memoir* (Soft Skull Press, 2002) (www.killinghope.org)

JAY GRIFFITHS

Progress is a four-letter word

Sometimes even pipe dreams come true

I didn't hold out much hope. The email had come from a South American woman detailing the Camisea gas project in Peru, part of the funding for which was to be approved the following day. Her message asked people to voice their objections. I faxed my letter to the Inter-American Development Bank (IADB), thinking some official would put it straight in the bin.

The Camisea project aims to extract gas from pristine rainforest, where indigenous people live in voluntary isolation. Now progress, pollution, erosion and biodiversity loss are coming. So are diseases like the common cold, against which the indigenous people have no immunity.

Sometimes the purveyors of progress don't even bother to cloak the destruction they bring. 'You are a little shit,' the Bolivian Amazon indigenous leader Sureyani Poroso was told. 'This is what you get for being against progress.'

Progress is a four-letter word.

What hope for those people living in voluntary isolation, then? I've spoken to indigenous people in the Amazon whose land borders on those of such groups; the latter are aware of the 'outside' world, have watched its incursions and have signalled that they wish to be left alone.

For them losing their forests would be like you losing your home, your pub, your church, your grandparents' graves, all the books you will ever read, all your possessions, all your medicines, your vigour, your memories, and having your language ripped from you and being left utterly mute.

But wait. Despite the fact that the Camisea project is headed by Texas-based Hunt Oil, whose chairman is one of the biggest donors to the Bush administration, and despite the fact that Dick Cheney's old firm Haliburton is involved, the IADB has just decided to 'postpone indefinitely' its vote on financing the project. Let all those cynics who cock a snook at protest take note. The IADB's decision came as a result of its offices being flooded with anti-Camisea faxes. Now that is what I call progress.

Jay Griffiths is the author of *Pip Pip: a sideways look at time* (Flamingo, £7.99)



ROBIN PAGE'S DIARY

■ I want to make one thing clear this month. I am not jumping on any anti-Blair bandwagon – I have always despised him. At first I thought he was manipulative and shallow, but gifted with large amounts of low cunning that gave him political success. Now after weapons of mass destruction, his apparent obsession with bombs, the chaos of hospital waiting lists, schools, etc, etc, I have come to the conclusion that he is just dim. His career highlights one of the major defects of our political system; it results in Oxbridge, parrot-trained dimwits attempting to run the country. Tank-top Tony is way out of his depth.

But through all this I have come to love listening to Tone. He is so funny – a natural entertainer. When he is surrounded by his chums from Defra (the Department for Eliminating Farming and Rural Affairs), it's like a re-launch of Monty Python.

■ The jokes began in February 2000, when our great visionary leader called on a few of his upper-middle-class green-wellie wearing friends in the West Country and asked: 'What country crisis?' He then announced that rural folk 'are better off than city dwellers'. These 'rural folk' are so well-off that in 2002 (with farm incomes averaging at £10,000 a year) 52,000 farmers and farm

workers left the land – without golden handshakes. There is one farming suicide every six days.

■ The next wisecrack came when Blair actually admitted that the supermarkets had Britain's farmers 'in an arm-lock'. Since then, however, he has done absolutely nothing to break that hold – apart from appointing Lord 'cream of the milk' Haskins as his 'farming guru'. As a non-executive director and former chairman of both Express Dairies and Northern Foods, the Labour donor is a big supplier to the supermarkets. Just the sort of chap to deal with the farming crisis.



■ Then came Johannesburg's Earth Summit last year. Tank-Top was in sparkling form, and his thoughts were echoed by his sidekick – the environment secretary Margaret Beckett. Yes, we had to take the environment seriously and we all had to reduce greenhouse gas emissions to save the planet. And then, er, we all had to get into line on globalisation and compete on the world market for sustainable growth. So, to reduce greenhouse gasses we had to fly into Britain from Malawi and Colombia foodstuffs that we could grow at home. And yet, for every calorie of carrot flown into Britain from South Africa, 66 calories of aviation fuel are used.

■ Lord Whitty, a junior farming minister with no visible knowledge of farming, is very hot on the efficiency of globalisation. His main theme is: 'Reform of the EU's Common Agricultural Policy and World Trade Organisation agreements must continue to push farming towards the global market. British farmers could tackle imports and compete for exports if producers became more competitive.'

Ironically, it is thanks to the weather that British farmers should be in a very strong position in the global marketplace this harvest. When they actually try to trade on the free market, however, they find that it isn't free all but stitched up by the food purchasing and marketing cartels.

'There is a drought and a shortage of milling wheat,' the millers and supermarkets protest to the consumer. So, the cost of wheat has gone up by 33 per cent to £80 a ton, and the price of bread has gone up by six or seven pence a loaf. (This despite the fact that the wheat in each loaf is worth about one pence.) But to guarantee at least some income, many farmers had 'forward' sold their wheat at £60 a ton, and they are told there is a surplus of milling wheat. No premium will be paid. Thus the merchant earns £20 a ton for doing nothing.



Lord Whitty

In addition to this, grain merchants normally want wheat from the farm with a maximum moisture content of 15 per cent. Should the moisture content be any higher the farmer is charged a penalty for 'drying'. If he complains, he is offered his wheat back – at his own expense. This year, the wheat has been reaching the merchants with a 12 per cent moisture content. Once again, no premium is being paid to the farmers for very dry wheat. The merchants then dampen the grain – bringing the moisture content up to 15 per cent so that the grain weighs more and the merchants have more tons to sell and profits to bank.

Lord Whitty says such 'irregularities' will be solved by the global market.



■ But the summer drought that has been quite kind to Britain has been very unkind to other parts of the world. Last year the Ukraine dumped millions of tons of wheat at £40 a ton onto the British market, causing the price of British wheat to crash virtually to the cost of production. This year the Ukraine and much of the rest of the old Soviet Bloc is crying out for grain. So what is the great free-market, globalised EU considering? Imposing an export tax on the movement of grain outside Europe, so as to discourage exports. What is good for the goose does not appear to be too good for the gander.

Robin Page is head of the Countryside Restoration Trust

DEADLY SHAMPOOS • Ever considered washing your hair in brake fluid? Or that the cost of shine from popular shampoos could be cancer? Behind the clever marketing and aggressive advertisements of Britain's third favourite shampoo is a list of chemicals that are far from squeaky clean. By Eugenie Reidy

Proctor & Gamble (P&G) attributes the success of its Herbal Essences shampoos to a growing consumer desire for products that are more 'natural'. But while P&G boasts that Herbal Essences contains 'natural, organic herbs and botanicals that come to us in pure mountain spring water', the shampoos actually include dangerous synthetic and petrochemically-based ingredients.

10 of the 12 ingredients listed here have all been linked with at least one of the following health problems: cancer, endocrine disorders, central nervous system problems, birth defects, organ and tissue damage, skin and hair damage and allergic reactions.

As most popular shampoos contain one or more of these ingredients, don't forget to read the label.

THE HAIR-CARE MARKET

The global hair-care market is valued at \$35 billion.

P&G manufactures and markets more than 250 products to more than five billion consumers in 130 countries around the world. Its net sales in 2002 were \$40.2 billion; beauty care accounted for \$8.08 billion.

The Herbal Essences range was ranked second in US shampoo sales last year, and third in UK sales.

For a list of ideas on home-made natural shampoos see Kim Erickson's *Drop-Dead Gorgeous: Protecting Yourself from the Hidden Dangers of Cosmetics* (Contemporary Books, 2002)

Non-toxic and petrochemical-free brands include:

- Aubrey Organics – www.aubrey-organics.com
- Aveda – www.aveda.com
- Kiehl's – www.kiehls.com
- Dr. Hauschka – www.drhauschka.com
- Herbs Hands and Healing – www.herbs-hands-healing.co.uk



COCAMIDOPROPYL BETAINE

Purpose:
To increase shampoo foaming and thickness.

Health effects:
Dermatitis, dryness and irritation of the scalp.

SODIUM CHLORIDE (salt)

Purpose:
To increase viscosity and make products that would otherwise have a watery consistency look thick and 'rich' instead.

METHYL/PROPYL PARABEN

Purpose:
Parabens are petrochemicals used in almost all cosmetics because of their wide-ranging ability to kill bacteria and thus preserve the product.

Health effects:

- Endocrine disruption: parabens can mimic oestrogen action and interfere with sexual development and reproduction.
- Allergic reactions are common.

DIAZOLIDINYL UREA

Purpose:
Anti-bacterial.

Health effects:

- A formaldehyde releaser (see DMDM Hydantoin, above).
- An eye and skin irritant.

BENZOIC ACID

Purpose:
A preservative and solvent.

Health effects:

- Contains carcinogenic benzene rings and toluene, which are also thought to be hormone disruptors and to cause birth defects.
- Irritates the respiratory tract.
- An eye and skin irritant.

COLOURANTS CI 17200, CI 15510, CI 60730, CI 42053

Purpose:
To give the shampoos colouring like the herbs they are said to derive from.

Use and health effects:
These are just four of hundreds of synthetic and petrochemical colourants whose certification is unknown and controversial. Most colours used in cosmetics await testing and have not had their safety proved or even studied.

DMDM HYDANTOIN

Purpose:

Anti-bacterial.

Health effects:

- Found to cause lung cancer and damage DNA in laboratory tests.
- Contains 17.7 per cent formaldehyde, which is an irritant and carcinogen and causes a toxic reaction in 20 per cent of people exposed to it.

COCAMIDE MEA

Purpose:

To make shampoo lather in a foam that would otherwise be impossible.

Health effects:

Causes cancer in laboratory animals. Cocamide MEA contains momo-ethanolamine, which reacts with SLS/SLES to produce the carcinogen nitrosamine.

SODIUM LAURETH /LAURYL SULFATE (SLES/SLS)

Purpose:

Strips grease from the hair by corrosion and makes shampoo spread out and penetrate. It enters the skin very easily and remains in tissues (especially brain, heart and liver tissues) for a relatively long time.

Use:

Found in 90 per cent of all commercial shampoos and in many other health and beauty items, especially skin creams and toothpastes. SLS has been prohibited in bubble baths because it has an adverse affect on skin protection and causes rashes and infection. It is also found in industrial cleaners. Laboratory clinical trials use SLS as an irritant to test the effectiveness of healing agents.

Health effects:

Transported through the bloodstream, SLS/SLES will build up in the heart, liver, lungs, brain and eyes. It will be retained in tissues for a long time and could cause the following effects:

- Cancer – SLS/SLES reacts with other chemicals to form cancer-causing nitrosamines and dioxane;
- Endocrine (hormone) disruption – SLS/SLES can mimic the action of hormones and disrupt the associated mechanisms that control our day-to-day bodily functions; it is known to mimic oestrogen action and interfere with the reproductive system and sexual development;
- Eye damage – SLS is especially readily absorbed into the cells of the eyes (through absorption through the roots of hair, not direct eye contact); it damages their function and development – particularly in children;
- Hair loss – SLS is a harsh enough corrosive agent to attack the hair follicle;
- Increased skin sensitivity – SLS damages the skin's ability to act as a barrier against harmful substances, enhancing allergic responses;
- Dry skin – protective lipids are stripped from the skin's surface by SLS's corrosiveness, and skin becomes less able to retain moisture.

INGREDIENTS: AQUA • SODIUM LAURETH SULFATE • SODIUM LAURYL SULFATE • COCA-MIDOPROPYL BETAINE • PARFUM • COCAMIDE MEA • SODIUM CHLORIDE • DMDM-HYDANTOIN • DIHYDROXYPROPYL PEG-5 LINOLEAMINIUM CHLORIDE • GUAR HYDROXYPROPYLTRIMONIUM CHLORIDE • METHYLPARABEN • TETRASODIUM EDTA • PEG-60 ALMOND GLYCERIDES • PROPYLENE GLYCOL • ROSA CANINA • SIMMONDSIA CHINENSIS • TOCOPHEROL • PROPYLPARABEN • DIAZOLIDINYL UREA • CITRIC ACID • BENZOIC ACID • CI17200 • CI15510 • CI60730 • CI42053.

Clairol a division of The Procter & Gamble Co.

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Surrey KT13 0XP, UK. Made in E.U.

For R.S.A.: Distributed by Adcock Ingram Consumer
2, Purlin Street, Isando, 1600, R.S.A.

PARFUM/ FRAGRANCE

Purpose:

To create the 'natural, botanical' smell that is an important part of the marketed appeal of Herbal Essences but no reflection of its actual ingredients.

Use:

There are an estimated 5,000 fragrance ingredients on the market, 95 per cent of which are created in the laboratory – many from petroleum products. The actual ingredients are not listed to protect secrecy, as fragrances can not be patented.

Health effects:

- Petroleum-based ingredients can cause cancer, birth defects, central nervous system disorders and allergic reactions.
- Perfumes are the leading cause of allergic reactions from cosmetics use.

PROPYLENE GLYCOL

Purpose:

To hold moisture in the shampoo and give it a 'silky feel'.

Use:

Propylene glycol is a petrochemical that is used as a major ingredient in brake fluid and anti-freeze as well as health and beauty products such as baby lotion and mascara.

Health effects:

Although the US Food and Drug Administration (FDA) has classified propylene glycol as 'generally recognised as safe' it has been acknowledged as a neurotoxin and shown to cause dermatitis, liver abnormalities and kidney damage in animal studies. It may also inhibit cell growth and be irritating to the skin.

TETRASODIUM EDTA

Purpose:

Facilitates cleaning by binding dirt and traces of heavy metals.

Use:

Included in detergents, agricultural chemical sprays and pharmaceutical products.

Health effects:

- EDTA does not readily biodegrade, so once introduced into the environment it dissolves toxic heavy metals and enables them to enter the food chain. Heavy metals (about 20 exist) are toxic to human health and adversely affect behavioural, physiological and cognitive systems.
- An eye and skin irritant.

Label on the back of Clairol Herbal Essences



The gospel acco

Society, Media & Culture How the Church of Stop Shopping spreads the holy word of anticonsumerism throughout the Starbucks, Disney stores and Shopping malls of uptown New York. By Paul Kingsnorth

It's the hair that does it. The hair is visible three blocks away, a vast golden skyscraper of a bouffant glinting in Manhattan's winter sunshine. The hair and the teeth. The teeth are like sarsen stones, and the grin that they collectively form is wide, friendly, deeply cheesy and pointing in my direction. This could be no one else.

'Paul?' The Reverend Billy grasps my hand very firmly indeed.

'Bill. So sorry I'm late.'

He looks down at the paper cup in my hand, in the bottom of which are the cold dregs of a Starbucks latte.

'Now, you didn't pay for that, did you?' The

Reverend is displeased, and decides that what we both need is some 'real coffee'. I dispose of my cup and we make our way across Astor Place, away from the biggest Starbucks in Manhattan and towards a battered green coffee truck, owned by a friend of Billy's, which is blasting out jazz from a couple of rickety speakers and serving what is indeed much better coffee than Starbucks has ever dreamed of.

'My man,' says the coffee truck owner to Billy, 'how goes it?'

'Well,' says Billy, 'very well. One of your finest cappuccinos, I think. No, wait – make that two.'

The Reverend Billy is the founder and spiritual leader of the Church of Stop Shopping, and he is on a mission from God. His mission is to save New York, to save the US, to save the world from the scourge of consumerism. It is a scourge visited upon the unbelievers like the plagues of Egypt, sent down from

With just 5 per cent of the world's population, the US is responsible for 30 per cent of global consumption and 25 per cent of world fossil-fuel consumption

There is barely a foot of public space in the US that has not been bought up by corporations trying to flog their goods to the easily overspent American. Even Empire State Building was lit up in napple yellow in August 2002 to celebrate the drinks company's 30th anniversary.

on high to homogenise their neighbourhoods, destroy their small shops and cafés, substitute independence for dependence and hand control of their streets to a buccaneering gang of multinational corporations who will decide what people buy and take their money for doing so. The Reverend Billy has come to save them – to save us – from all this, and I have come, today, to Astor Place, to have my sins absolved (specifically, the purchase of that latte) and to listen to the Reverend explain to me how he intends to do this.

We wander a few blocks downtown, the Reverend pushing his bicycle and pointing out every few yards this or that local landmark that stood proudly independent for years and which is now a McDonald's, a Disney Store, a Borders, another Starbucks. We seek refuge in one of the few places in midtown Manhattan that is not yet owned by a multinational chain – Jones Diner, a 60-year-old US classic, all chrome, steel, neon, plastic, hamburgers and grits (whatever they are). It exudes James Dean, Humphrey Bogart, Steve McQueen. I've seen this kind of thing in films, so I know.

'This is one of the last human-scale places in the neighbourhood,' says Billy. 'They want to knock it down. They want to build an "executive development".'

'Hey, you!' says the diner's owner, popping up from

his own. Others who object to the rash of Starbucks (and other such corporate chains – from bookshops to burger bars) spreading across their town, destroying local competition and bleaching the character out of their neighbourhoods, might perhaps choose to boycott the chains. They might write a letter to someone, and may even go so far as to stand outside stores holding placards and shouting 'no more Starbucks', or something similar. Billy doesn't think any of this works, and he's probably right. Billy thinks that in a world of wall-to-wall consumerism, mass advertising and information overload protest must be as new, as shiny and reinvented as the economy itself.

Billy wants people to understand that when they buy a Starbucks coffee they are buying a lot more than a drink, and he wants to get the message across in a way that people cannot possibly ignore; in a way, indeed, that they might even find amusing. And so, on a chosen day, at a chosen time, Billy will enter Starbucks, his hair towering and magnificent, his teeth gleaming, his body encased in a dog collar and white

Pizza

Hut recently succeeded in getting its logo pasted on to the side of a Russian space rocket, and then topped even this achievement by delivering 'the world's first space-consumable pizza' to cosmonauts on the International Space Station. 'Wherever there is life, there will be Pizza Hut pizza!' declared the company's chief marketing officer, who had perhaps been watching a little too much *Star Trek*. Pizza Hut is not alone. Radio Shack, Lego and Popular Mechanics all paid to have astronauts promote their products on the space station.

According to Billy

behind the stainless steel counter. He wears a striped apron and a little white hat. He is pure diner, pure New York, pure America. This is my first time in this country, and everything already looks terribly familiar.

'Hey you!' repeats the owner, waving at Billy. 'We don't like your sort in here. You look like trouble.' Both of them are grinning. This is obviously a well practised ritual.

'Fine,' says Billy. 'We'll go and eat in Starbucks instead. They have little shrink-wrapped biscuits. We don't need character in our neighbourhood anyway, we'd rather have corporate cool.'

'Turkey's the special,' says the diner man.

'Then bring us turkey, please, my good friend,' says the Reverend. The diner man disappears into the kitchen, and Billy turns back to me, teeth flashing like homing beacons.

'Let's talk,' he says.

(Star)Bucking the system

Since he first took his vows, the Reverend Billy has been waging a one-man crusade against consumerism, in a style that is all

The amount of energy used by one American is equivalent to that used by six Mexicans, 38 Indians or 531 Ethiopians.

tuxedo, and he will begin to preach.

With his stentorian wail, his well-enunciated words and his talent for self-publicity he will treat the assembled customers to a sermon on the evils of 'Frankenbucks'. He will tell them about the genetically-modified, Monsanto-brand bovine growth hormones in Starbucks milk. He will tell them about the battles the company has engaged in to prevent its workers joining trade unions. He will tell them about Starbucks' corporate policy of 'clustering' outlets in parts of town where there are local cafés, and expanding the clusters until only Starbucks is left. He will tell them about the company's use of prison labour to package its products.

Most of all, he will preach the gospel of anti-consumerism, and tell tales of neighbourhoods cannibalised by chain stores and left out in the sun to die. He will amuse and infuriate, the Starbucks employees will shuffle their feet, the branch will begin to empty and, if he's lucky, Billy will be thrown out – still preaching. He loves being thrown out.

This is just one – the most basic – of the

tools in the Reverend's armoury. He will also, on occasion, initiate 'cellphone operas', in which members of his congregation will wander the store shouting loudly into cellphones about anything from slave labour on coffee plantations to low-paid employees, their conversations rising to a coordinated crescendo.

Billy has also written a number of scripts for suggested 'spat theatre', which anyone, anywhere, can perform (loudly, of course) in their local Starbucks. One features a couple discussing having sex in the Starbucks toilet. In another an ex-prisoner pops in for a coffee and discovers that the packaging he's just bought was glued by him while he was inside. Another, entitled *Where My Latte Gets its Bovine Growth Hormones*, features two lovers whose relationship has been sponsored by Monsanto.

himself a priest, his own Calvinist childhood, the US's television-evangelist tradition, and what was happening to New York's Times Square.

This was in the mid-1990s, when mayor Rudolph Giuliani was at the height of his campaign to clean up New York. Part of that campaign involved a scheme to transform Times Square from a haunt of 'low lifes' to a playground for tourists and consumers.

'Anyone who looked like they had character was out,' says Bill, plunging into his freshly delivered plate of turkey, 'because they were creating a mall in Times Square. It had been full of preachers, ranters – a place where all sorts of people would come and shout at each other about their beliefs and nobody asked why. The end of that was the start of a very deliberate process, and we see the results today. Places like Times Square and SoHo are now very commodified, and the streets are not really

Almost 60 million adult Americans – over a third of the US population – are overweight, and there has been a 42 per cent increase in childhood obesity in just 20 years. This pandemic has been blamed on the over-consumption of both fast food and television.



All this explains quite adequately why Starbucks hates and fears the Reverend – so much so that they distributed a memo to all their New York employees entitled 'What should I do if Reverend Billy is in my store?' Hide, perhaps.

Baptism of ire

In his more sober moments the Reverend Billy is plain old Bill Talen – an actor and writer who, after many years treading the boards, decided that he needed a new direction. Bill had always wanted his art to change the society it reflected, but it took the birth of the Reverend for this to become anything like a possibility. His alter ego was inspired by a number of factors – an old friend who was

public spaces any more.'

Bill believed that the community and the city he valued was being sold – to some of the biggest retail corporations on the planet. From this belief, the Reverend was conceived; and at the Disney Store in Times Square he was born.

'I decided to don my uniform,' he says. 'Dinner jacket like a televangelist, and the collar. I created a theology based on standing up outside the Disney Store.' He morphs into the Reverend mid-sermon: 'MICKEY MOUSE IS THE ANTI-CHRIST, CHILD! DON'T GO INTO THAT STORE! DON'T GIVE YOUR MONEY TO THE PEOPLE WHO PAY THEIR SWEATSHOP

Coca-Cola and Pepsi have branded entire schools, paying them up to \$20 per pupil in exchange for the schools selling a set number of drinks on campus and banning the products of rival drinks manufacturers. TV company Channel One beams 'educational' programmes into 12,000 US schools on free, donated equipment – on condition that the pupils watch adverts aimed at their target demographic. Procter & Gamble sponsors school lessons on oral hygiene. Campbell's Soup created a science 'lesson' where pupils compared the viscosity of one of their sauces to that of a rival. And Kellogg's created an art project in which sculptures were made from Rice Krispies.

Children in the US spend \$24.4 billion a year, and adults spend a further \$300 billion a year on their behalf. 'If you own this child at an early age,' said the former president of the clothing chain Kids R Us (apparently with no sense of rising horror), 'you can own this child for years to come. Companies are saying, "hey, I want to own the kid younger and younger".' The head of Prism Communications said much the same: 'They aren't children so much as what I like to call "evolving consumers".'

WORKERS A DOLLAR FOR AN 18-HOUR DAY! SAVE YOUR SOUL!' A middle-aged man eating his lunch in the stall behind us looks round to check he's not in any danger from this shouting lunatic.

Before long the Reverend was inside the store, coordinating cellphone operas about anorexia and Barbie dolls, and being regularly evicted by large, unamused security guards. He press-released all the theatre critics in New York: 'A new play is opening at the Church of Stop Shopping, starring the Reverend Billy and friends,

fluorescent, hushed, centrally planned chain stores all over New York now, and gradually the sassy verbosity that you love about this place – the ability of regular people to tell amazing stories – all that is considered a market, and that "market" is having so many brands pushed onto it that it is being murdered.'

In the wrath of the Reverend Billy, global interests are assailed by a very local sensibility. It is, says Bill, the neighbourhood striking back.

'I take my cue from what is happening in my neighbourhood,' he says. 'Is it a healthy neighbourhood? Are people looking each other in the eye, telling stories, circling each other with playful insults? Do they feel they belong there? Will they rise up and defend each other? That's a healthy neighbourhood. The transnationals need us not to have neighbourhoods. They want to "mall-ise" us. They want



opening in the Disney Store, Times Square.' Hundreds of people came to watch. As part of the play Billy and friends would jump up onto the counter and stop the cash registers. Bodyguards shouting at him from both sides – 'they were my proscenium arch' – were incorporated into the performance.

Bill, it is clear, loves every minute of this. He is loving just telling me about it. But it should go without saying that this is not mere entertainment. This is politics.

'The corporations are pushing into public space so thoroughly that it's not public space any more,' he says. 'It's an amazing privatisation process going on in New York at the moment; the streets, the very fundamental of public space, are no longer ours. I moved from the Disney Store to Starbucks for a reason. Starbucks believes it's selling a lifestyle, it's selling meaning, it's selling community, it's involving us in a consensus about what it means to be a neighbourhood. It's completely delusional. The opposite is happening. We have

our relationship with each other to basically happen through a credit card. The transnationals are a totalising presence. Their major market is to persuade the individual that they will not enjoy direct access to their own lives; people's dreams and desires will be mediated through their presence, their image, through what they sell.' He soaks up the last of his gravy with a slice of flimsy white bread.

'That's where I get my politics,' he says. 'I am defending my neighbourhood's right to not be mediated.' ■

Extracted from *One No, Many Yeses: a journey to the heart of the global resistance movement* by Paul Kingsnorth (Free Press, £10).

www.paulkingsnorth.net

Learn more about the Reverend Billy at www.revilly.com

Per-capita consumption in the US increased by 45 per cent between the 1970s and the 1990s. Unfortunately, and perhaps not coincidentally, so did rates of obesity, depression, eating disorders, family breakdown, crime and income inequality. The proportion of the US population describing themselves as 'very happy' failed to increase at all. In fact, it fell by 4 per cent.

THE WATER HYACINTH • This beautiful but deadly plant proliferates in lakes across Africa – choking everything in its path. Why, asks Tom Hargreaves, have all attempts to manage it failed?

Originating in Latin America, the beautiful water hyacinth is believed to have been introduced to Africa in the 19th century by Belgian colonialists who wanted to adorn ponds with it. Today, it proliferates across the lakes and rivers of central and eastern Africa, causing serious social and economic problems.

- The plant has a high demand for oxygen and starves all other marine life of the gas, which leads to depletion of fish stocks.
- Its large leaves block out sunlight for other aquatic plants, preventing photosynthesis. And the high rate at which the leaves evapotranspire



(release water vapour) aggravates water loss. Thanks largely to the hyacinth, Lake Victoria is described as being on the verge of 'ecological collapse'.



- Local communities have been forced to migrate because the hyacinth has stopped them anchoring near to their settlements. This makes fishing impossible.
- The hyacinth has spread behind the huge dam on Lake Kariba in Zambia, disrupting the electricity supply by clogging the turbines and reducing water flow. Yet another overpriced and oversized development brought to its knees by nature.

THE PROBLEM

Water hyacinths never used to be a problem, but their growth has mushroomed since WWII as an abundance of nutrients – derived from loose topsoil – has been washed into the waterways. This process is exacerbated by industrial agriculture, deforestation and dams.

INDUSTRIAL AGRICULTURE – Encouraged by World Bank subsidies and structural adjustment programmes, agricultural systems in east and central Africa have been profoundly changed over the last 50 years. There has been a shift from small-scale subsistence farms growing a range of crops to large-scale monocultures that demand costly applications of fertilisers and pesticides to fend off disease. The modern approach has caused a massive increase in soil erosion, which has been compounded by overgrazing.

DEFORESTATION – Vast areas of forest have been cleared in recent years to make way for this intensive agriculture. Yet forests are essential to maintaining good soils. The roots of the trees act as the soil's natural binding mechanism, while the canopy serves as a windbreak and prevents the topsoil from being blown away.

BIG DAMS – The construction of large dams throughout the region in the 1960s and 1970s resulted in huge lakes building up behind the dams, and slowed the flow of rivers downstream. These vast expanses of still and slow-moving water provide the perfect environment in which the hyacinth can prosper.

CLUMSY ATTACKS ON THE HYACINTH

The usual techniques for tackling a problem posed by nature have been tried – basically, attempting to destroy the hyacinth by whatever means necessary.

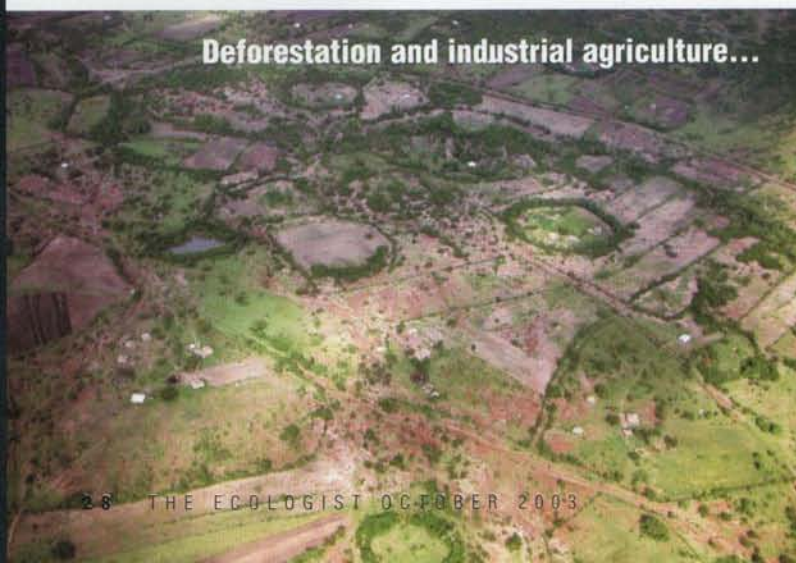
CHEMICAL – The most common strategy has been to cover the water hyacinth with herbicides. This has had little to no effect as the hyacinth has a 15-year germination period. Thus, not only the leaves but also the roots and seeds must be destroyed for effective removal. What has happened, however, is that the herbicides deployed have destroyed entire aquatic ecosystems and the livelihoods that depend upon them.

BIOLOGICAL – In Uganda, the Central American Weevil Beetle (which feeds on the hyacinth) has been introduced into Lake Kyoga. Applying this technique on a large scale would require billions of beetles to be imported, and the introduction of another 'alien' species will almost certainly cause further imbalances in the ecological system.

MECHANICAL – To date, the most effective technique for managing the problem has been the manual destruction of the hyacinth and part of its root network. In Zimbabwe 200 full-time workers are paid the minimum wage to keep the hyacinth population around Harare in check. This is effective but also expensive – costing over \$100,000 a year even before the cost of transporting the cut plant matter out of the region is added.

None of these attempted solutions has halted the proliferation of the water hyacinth. The reason for this is that, as with other traditional 'pest'-control programmes, the symptoms are being targeted instead of the root causes.

Deforestation and industrial agriculture...



...result in soil erosion and gullying...



By thinking in a more systemic way a problem has been converted into a fantastic opportunity. This systemic approach prevents soil erosion, saves trees, reduces the hyacinth problem, provides jobs and creates five sources of either feed or revenue where before there were none

THE SOLUTION

Nothing is wasted in nature, and the water hyacinth is nature's attempt to recover the nutrients that would otherwise be lost as a result of topsoil erosion. By seeing the plant as an opportunity instead of a problem, the hyacinth can be managed more sustainably.



1 MUSHROOMS

Hyacinth biomass is a very fibrous material and cannot be fed to livestock as it would harm their digestive systems. However, it is excellent for growing mushrooms in. Indeed, mushrooms spore spontaneously on dried piles of water hyacinth waste awaiting disposal. Early experiments in growing mushrooms from dried water hyacinth substrate yielded fantastic results, with a first crop produced after just 30 days, and second and third batches within another 10 days.

Conventional mushroom farming incurs 60-80 per cent of its costs in the preparation of substrate and in the use of energy needed to kill microbial organisms, which compete with mushroom spores. In the hyacinth system the substrate is free, and locally-sourced biogas fuel saves energy costs. Furthermore, water hyacinth substrate actually outperforms traditional



substrates like sawdust, producing 1.1 tons of mushroom per ton of substrate. And the oyster and straw mushrooms grown are particularly rich in potassium, magnesium, iodine and calcium – all of which are crucial to a healthy diet.

The system is therefore ideal for microfinance initiatives, costing an individual farmer only US\$500 to start up, with the first mushroom stock being sold after only 1 month and other revenue streams following on soon after. From the 200 unskilled workers clearing the hyacinth on a minimum wage in Zimbabwe (Z\$16.10), it is estimated that 1000 jobs could be created by mushroom cultivation. At present, mushrooms sell for around 11 Zimbabwean dollars per kilo and, when supplemented with the other revenue streams, this process could provide wages as high as Z\$200 in the long term.



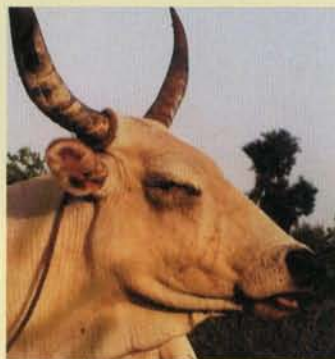
2 EARTHWORMS – HUMUS

Mushroom cultivation breaks up the ligno-cellulose in the water hyacinth and leaves a residual substrate that can be put to excellent use in cultivating earthworms. The earthworms in turn produce high-quality humus that can then be applied to the soil as fertiliser.



3 CHICKENS

The worms also provide an ideal high-protein chicken feed, and the chicken manure contributes to the generation of electricity from biogas.



4 CATTLE

The rest of the residual mushroom substrate can be used as a source of feed for cattle, whose manure is also used to generate biogas.



5 BIOGAS

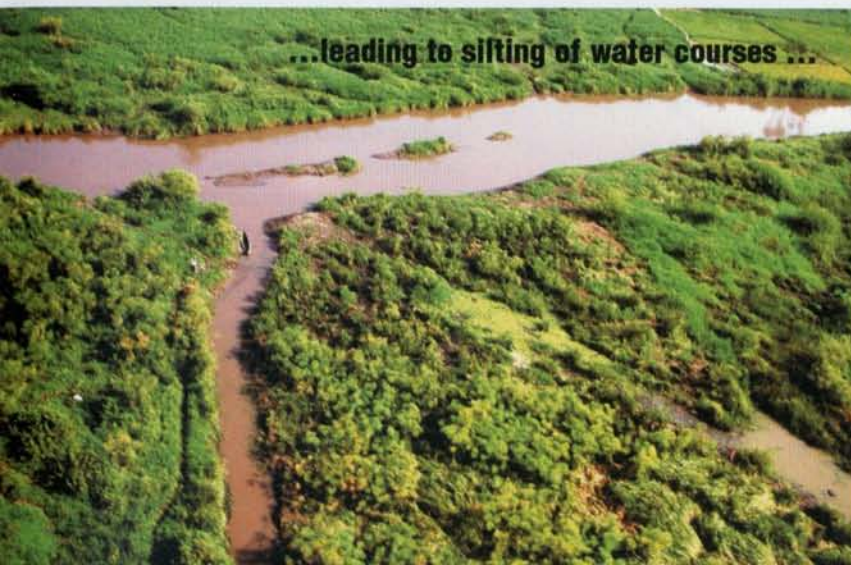
Cattle and chicken manure is channelled into a 'digester' (pictured above). The methane contained in the manure is used as fuel, thus reducing the need to cut down trees for firewood.

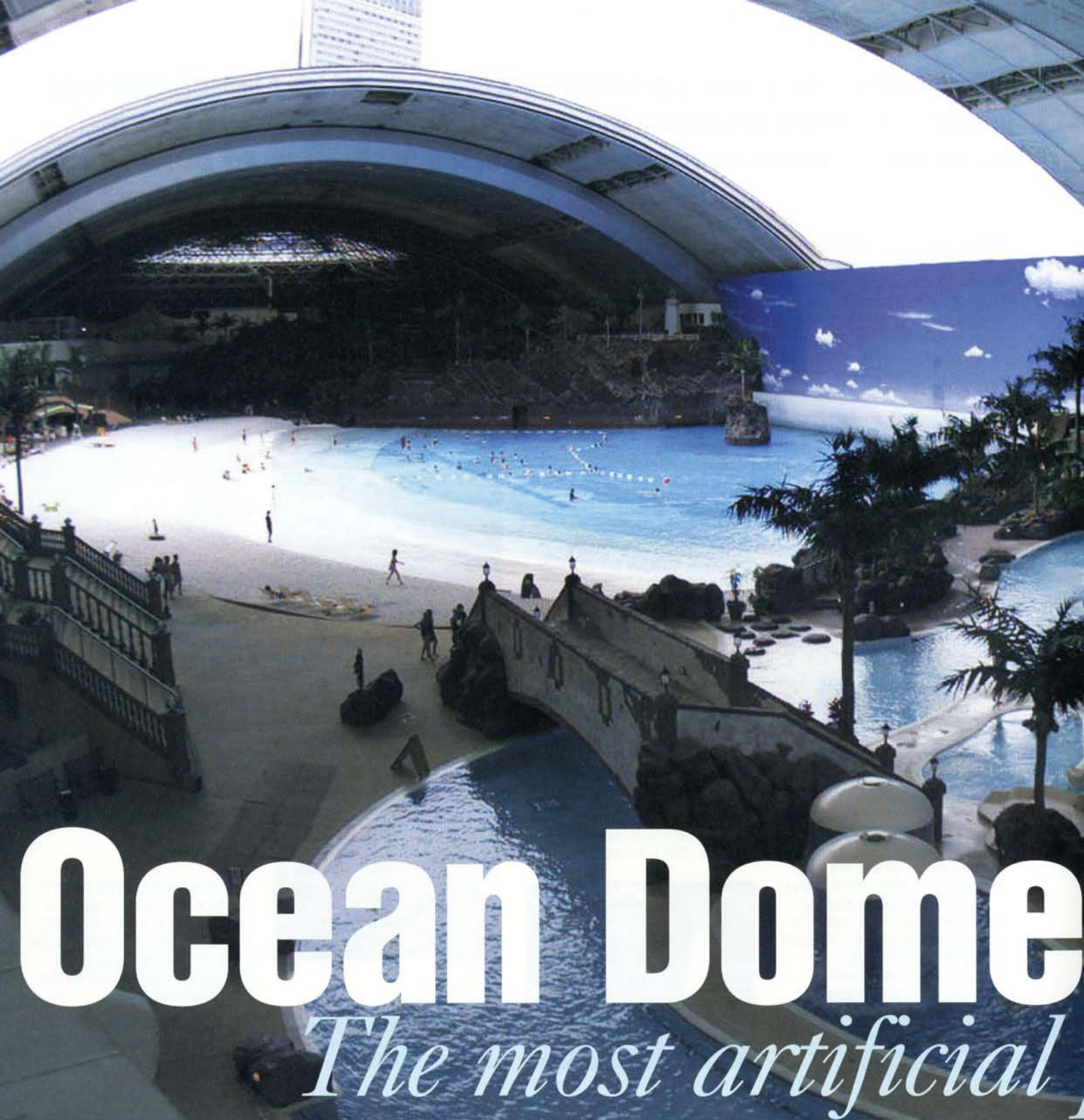


RESULTS

Soil erosion is reduced and the soil is replenished with nutrients because of the use of humus and less trees being cut down. The nutrients available for the hyacinth in lakes and rivers diminish, and the plant's population returns to a controllable level.

Reference: Gunter Paull, *Upsizing: The Road to Zero Emissions: more jobs, more income and no pollution* (Greenleaf Publishing, 2000)





Ocean Dome

The most artificial

Nature & Resources David Boyle slips into a pair of bright rented swimming trunks and heads for a fake paradise

It's real water, but that's about all that's genuine. Yet the people who bathe at the artificial beach at Japan's Ocean Dome – with its artificial sunshine, artificial waves and artificial sand – expect something better than the merely real.

And therein lies the problem. It is now nearly two decades since the novelist Umberto Eco wandered around California looking at 3-D versions of Leonardo da Vinci's painting of the Last Supper, describing the whole experience in an essay

called *Travels in Hyper Reality*'.

He coined the term 'hyper reality' to describe the constant assurances he was given that the 3-D Last Supper experience was the most moving event of his life, and better than seeing the real thing.

Since then, we have been overwhelmed with the hyper-real, by fake flavours, fake breasts, fake sounds, fake food and fake places – all hyped by powerful marketing as if



place on earth?

they were somehow 'better than real', but all actually downright artificial.

The country that really does hyper-real is Japan, and Ocean Dome (motto: 'paradise within a paradise') – with its sliding roof, its wave machine and its constant 30 degrees temperature – is the phenomenon's most extreme expression.

Since I was writing a book about authenticity, I felt I just had to see Ocean Dome myself.

Heaven on earth?

Ocean Dome is part of the so-called Seagaia resort along the coastal highway outside the city of Miyazaki in the far south of Japan. It was a longish journey from Tokyo, by train, plane and bus, before I drew up in the almost deserted forecourt.

It was Friday afternoon, and my arrival at the ticket counter created a small stir. Either it's the well-known

Japanese recession or hyper-real is not currently in vogue, but I appeared to be almost the only visitor.

So, I rented a pair of swimming trunks (orange with sailing ships on), and then it was a short semi-naked walk through the empty foyer and onto the beach itself.

The heat and humidity were inviting at first – like an overheated municipal swimming pool – but the size of the place was a shock. Ocean Dome is bigger than many ocean liners (over 1,000 feet long) and has space for 13,500 tons of salt water and 10,000 people – without the mild inconvenience of real salt water, real crabs, real seaweed or fish.

But there were two less inviting aspects that quickly became apparent. One was the feel of the artificial beach under my toes; the beach is made from small white pebbles like those you find on graves in English churchyards.

The other was the slight gloom. It was a beautiful summer's day outside, but the great dome above the beach stayed resolutely shut for fear that the real world would tempt us away.

I watched an elderly lady paddling and a couple of youngsters dashing in and out of the precisely regulated waves, and tried to pinpoint exactly why the whole thing was disconcerting.

It was pleasantly warm, but it felt faintly like a gymnasium – and they always remind me of exams. Also, the palm trees were too perfect to be real. Some fruit on display turned out to be plastic, and the beach's backdrop was painted with small clouds and a deep blue sky as the Pacific view outside probably should have been.

There was the noise of a waterfall up one end and the piped sound of 'Swing Low, Sweet Chariot', which you wouldn't, let's face it, get on a real beach. Up the other was a fake volcano, complete with various water slides called *Bali Ha'i*.

I wondered if it ever occurred to James A Michener or Oscar Hammerstein, writing *Tales of the South Pacific* and the musical based

Ocean Dome has space for 13,500 tons of salt water and 10,000 people – without the mild inconvenience of real salt water, real crabs, real seaweed or fish

REUTERS

on the book, that their imaginary island would one day make it into a Japanese theme park.

Reality bites back

There was something fascinating about Ocean Dome, but something unnerving too. I suppose it's the fear in the back of the mind that this may soon be the only kind of beach we've got left – the rest having been abandoned and turned into chemical jetties or oil slicks.

And I realised that this is exactly what

There is a quiet 'authentic' lobby, increasingly committed to real food, real culture, real politics, real schools, real community, real medicine, real culture, real stories

we have been told throughout my life – either by those who were excited about this brave new artificial future, or by those who felt powerless to stop it.

We have lived through more than half a century of being constantly told that the future of food was artificial, the future of books, newspapers, medicine and schools was virtual. And that we would soon deal entirely with computerised teachers and doctors through the internet.

For most of this time, these predictions have seemed only too true. Highly-paid technologists and corporate apologists told us that anyone who sketched out a different vision of the future was 'standing in the way of progress'.

But if you look around you – despite Ocean Dome, McDonald's and Microsoft – the real world has been fighting back. Many of the technologies predicted over the past half century have come true, of course, but they haven't sent reality packing as we were led to expect.

We haven't had the genius machines able to think for themselves (predicted in 1970). Or human embryo packets in shops (1966). Or robots to look after the elderly (1983). Or dish-making machines in the kitchen (1967). Or artificial moons instead of street-lighting (1968).

Despite the millions being pumped into replacing biological human life with a mixture of genetic engineering, cryogenics, artificial intelligence and nanotechnology, a powerful minority of the population seems determined to defend the human option.

In fact, everywhere we look, there is a struggle going on between real and artificial. There is a quiet 'authentic' lobby, increasingly committed to real food, real culture, real politics, real schools, real community, real medicine, real culture, real stories...

They may eat fast food sometimes. They may shop online, but they also increasingly defend their right to an authentic option with increasing passion. GM genes, they remonstrate, for example, would turn the whole of agriculture fake.

They are the force behind the rise of local brands, real ale, reading groups, organic vegetables, slow food, poetry recitals, unmixed music, materiality in art and unbranded vintage fashions, which are all symptoms of the same thing – a demand for human-scale, face-to-face institutions and real experience.

Perhaps that was the problem with Ocean Dome: there comes a point when people react against the fake.

Japanese theme parks have risen and fallen over the past decade. There were robots of US movie stars at Tochigi-ken, a reproduction of Hans Christian Andersen's house in Hokkaido, a whole British-style village at Shizuoka and a reproduction of Christopher Columbus's ship the *Santa Maria* in Osaka. (The Osaka *Santa Maria* is, bizarrely, twice the size of the original. Presumably, its owners were afraid that the smallness of the ship that discovered America would disappoint the tourists.)

Japan's recession has done for many of these theme parks, and one Friday afternoon at Ocean Dome was enough to convince me of the rumours of its

financial problems. Since my visit, the whole Seagaia resort has been snapped up by New York-based corporate raider Timothy Collins.

I could happily live without Ocean Dome, even after a demonstration of the wave machine that can produce 10-foot waves for surfing at the press of a button, each precisely the same as the last.

After an hour or so writing postcards on the beach, I gave up. The real sunshine filtering through the glass at either end of the monstrous auditorium was just too tempting. And the real rolling waves of the Pacific Ocean were just a few hundred yards away on the other side of the highway.

In the head-to-head battle between real and unreal, I know which side I'm on. ■

David Boyle is the author of *Authenticity: Brands, Fakes, Spin and the Lust for Real Life* (Flamingo, £12.99); www.david-boyle.co.uk/authenticity



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PLANET • PEOPLE

THE ecologist

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...more than likely the answer is yes - p24

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YOU?

SPECIAL REPORT

Unfair Trade

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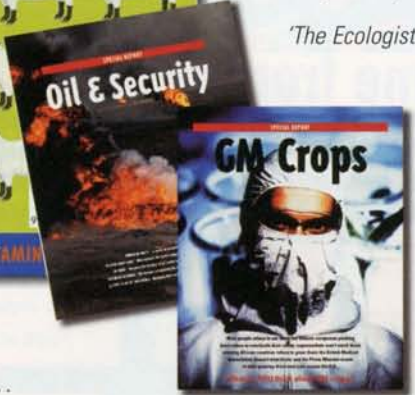
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**CUT FLOWERS • Say it with
labour rights abuses in court
By Venetia Hargreaves-Allen**

Which flowers come from where?

The UK's desire for cheap, identical, pest-free cut flowers all year-round has created a market worth £1.2 billion annually. Some 85 per cent of these flowers are imported from abroad – shipped thousands of miles and sold, predominately in supermarkets, at lower prices than those of locally grown varieties.



Six

1 CASH CROP IMPACTS

In equatorial countries, where fertile land is a precious natural asset and food security is a recurrent problem, the cut flower industry continues to expand remorselessly. Investors in flower farms have no qualms about moving people off their lands. Exactly this happened to the Okiek people in the fertile Rift Valley region of Kenya. In March 1994 they were forced out of the Tinet Forest of Olenguruone to make way for a massive flower farm owned by a former governor of the Central Bank of Kenya.

- In 2000 sub-Saharan Africa supplied 43 per cent of the cut flowers imported into the EU. The value of these flowers was over £250m. And yet the UN's Food and Agriculture Organisation estimates that 23 of these countries face severe food emergencies this year, and that over 60 per cent of their people have already suffered a 20 per cent decline in food available per head.
- After spending \$27m promoting the export of cut flowers, India earned a measly \$6.4m from the sector. As a direct result of this folly, the government budget for growing food was cut by 75 per cent.

2 PESTICIDE ABUSE

There are no regulations governing the use of pesticides on cut flowers, and importers are not required to monitor pesticide levels. In fact, the importers' demand for unblemished, pest-free flowers actually encourages growers to use excessive amounts of highly toxic chemicals. Farmed flowers are frequently and liberally sprayed with a multitude of chemicals including pesticides, fungicides and fumigants.

flowers... Say: 'I am happy to pay for environmental degradation, chronic illness and diseases that grow flowers for Western consumers but cannot feed their own people.'



CUT FLOWER FACTS

- The world cut-flower market is currently growing at 6-9 per cent per year.
- There are more than 30,000 varieties of roses.
- It takes from 45 to 57 days to produce a market-quality rose in a greenhouse.
- The consumption of cut flowers is concentrated in three regions: Western Europe, North America and Japan.
- Reasons why UK consumers buy cut flowers: 43 per cent – own use; 41 per cent – gift; 12 per cent – funeral; 4 per cent – other.
- There are people spending \$30,000 to \$40,000 just on flowers' US wedding consultant Cliff Hassanally
- Over 9 million red roses are given in the UK and over 50 million roses worldwide each Valentine's Day.
- When Princess Diana died over a million bunches of flowers were left at the Kensington Palace gates.

Reasons never to buy cut flowers again

- The Colombian flower industry uses 200 kilogrammes of pesticides for each hectare of flowers under cultivation.
- Ecuadorian rose producers typically use six fungicides, four insecticides, three nematocides and several herbicides.
- Many of the chemicals used are unregulated or, as in the case of DDT, banned. Ozone-depleting fumigants like methyl bromide (one of the most toxic substances known to man) are also used, thus exacerbating the problems of greenhouse gas emissions. Kenya spends up to 5 per cent of its foreign exchange earnings on methyl bromide.
- Sloppy application of chemicals frequently leads to poisoned waterways and groundwater, which decimate local species of animals and plants. Colombia's flower farms have contaminated the water table, subsoil and, until recently, cows' milk; the locals had been feeding their cattle stalks discarded by the flower factories.

3 POISONED LABOURERS

Flower farm workers are often deprived of even the most basic protection against chemicals, which are easily inhaled or absorbed through the skin. The problem is particularly acute in poorly ventilated greenhouses, where the pesticides and fumigants are often sprayed over the flowers before the workers have left the buildings.

- A World Resources Institute study found that 40 per cent of Ecuadorian workers had no protective equipment at all when pesticides were sprayed in their vicinity.
- A survey of 8,000 Colombian flower

workers revealed that individuals had been exposed to as many as 127 different pesticides. Of these, 20 per cent were found to be banned or unregistered in the US, because they were known to be extremely toxic and/or carcinogenic.

- Two-thirds of Colombian floriculture labourers suffer from pesticide-related health problems, including impaired vision, still births, congenital malformations and respiratory and neurological problems.

- In Tipicaya, the capital of the Bolivian flower trade, 3.8 per cent of babies born in 2000 had some form of birth defect, and 8 per cent of hospital patients were women with miscarriages.

4 WATER WASTE

Despite water scarcity across most equatorial countries, flower farms continue to thrive. Given that a large flower farm can use upwards of 80,000 litres of water every day, it is difficult to see how flower farm needs can be justified over those of food farming. Water conflicts between flower growers and local populations in Kenya are typical of the problems.

- Recurrent droughts in 2001 left three million people short of adequate water, yet Kenyan farmers still diverted enough water to produce over 52 million tonnes of flowers.
- Flower farms on the outskirts of Nairobi are piped water from the slopes of Mount Kilimanjaro. The majority of people living in Nairobi have no water supply.
- At Lake Naivasha, Kenya's main flower producing area, the commercial flower farms' unrestrained plundering of the lake

for water is destroying its ecosystem and leaving residents suffering from persistent water shortages.

5 WORKERS' RIGHTS ABUSED

When you buy your bunch of cut flowers, bare in mind that workers on the flower farms earn around \$2 a day. Slave wages aside, investigations by the International Labour Rights Fund (ILRF) have uncovered frequent and serious labour rights abuses on flower farms across the world.

- In Kenya 90 per cent of female workers have been raped by their supervisors.
- Illegal pregnancy tests and dismissals of pregnant staff are commonplace for the industry's mainly female workers.
- Unions are rare. Of the hundreds of flower companies in Ecuador, only three are unionised.
- To complete enormous quotas, for which workers are not paid overtime, parents often make their children work with them. The UN's International Labour Organisation estimates that 48,000 children work on flower farms in two Ecuadorian provinces alone.

6 FLOWER MILES

Despite being covered in chemicals, cut flowers do not have a long shelf life. To reach consumers in a perfect, plastic-like state they are flown into the UK from all round the world. When the miles from the fields to the airport and from the markets or wholesale importers to the retailers are added to the air miles, cut flowers are directly responsible for generating vast quantities of CO₂ emissions.

EU IMPORTS OF CUT FLOWERS IN 2000

Country of origin	Value in thousands of euros	% of total
Kenya	153,014	26
Colombia	104,014	18
Israel	100,592	17
Ecuador	78,089	13
Zimbabwe	66,121	11
Thailand	18,301	3
Zambia	17,468	3
Uganda	10,625	2
South Africa	9,081	1.5
Tanzania	8,393	1
Turkey	7,165	1
Morocco	5,495	1
India	4,985	1
Costa Rica	3,621	1
Peru	3,028	0.5

MAIN CUT FLOWERS IMPORTED INTO THE EU



The Cotton Club

Economics Illegal state subsidies mean that for every US cotton farmer that flourishes, 1,200 West African ones face ruin. Fiona Campbell reports

Brahima Outtara's life is simple, frighteningly simple. In the village of Logokouranit in western Burkina Faso he farms cotton for export on just half an acre of land. With the proceeds he feeds his family and sends his children to school. But last year's crop was ruined by poor rains, and thanks to the high levels of subsidies the US pays its cotton farmers this year's crop is due to be sold at rock-bottom prices. 'Cotton prices are too low to keep our children in school, or to buy food and pay for health,' Outtara says. 'Another season like this will destroy our community... I am praying for a better future.'

Outtara's farm is a far cry from the high plains of Texas – the cotton capital of the US. The US's 25,000 cotton farmers generate about a quarter of all the exported cotton in the world. Giant mechanised irrigation sprinklers and tractors guided by global positioning satellite systems crawl across vast farms of more than 12,000 acres each, saturating them in pesticides, fertilisers and water. The subsidies they receive mean that the US cotton barons have nothing to fear from low cotton prices. And yet, ironically, the 6 million cotton farmers of West Africa, where cotton is farmed in small,

hand-tended plots, produce a far better quality crop.

Since 1995 the value of the world cotton market has crashed by 66 per cent. Supply far exceeds demand. West African cotton farmers are tied hand and foot by the US's staggeringly hypocritical agricultural policies, policies which are endorsed by the World Trade Organisation. While countries such as Mali and Burkina Faso must operate according to George Bush's supposedly 'free' trade principles, and so may not subsidise their farmers for fear of losing grants from the World Bank and the International Monetary Fund, the US is illegally pumping \$4 billion (more than the entire GDP of Burkina Faso) into its cotton farms every year. Oxfam recently estimated that if the US withdrew its cotton subsidies the price of the crop would rise by 26 per cent.

Opposition to the US's double standards is growing. Brazil has accused it of provoking and maintaining the deepest crisis in world cotton markets since the Great Depression. It is claiming damages from

Washington for injury to its domestic economy. And in June the main West African cotton-growing countries of Benin, Chad, Burkina Faso and Mali demanded that the North should no longer be permitted to subsidise products that, like cotton, are of special interest to the world's poorest countries. Until these subsidies are eliminated, the West Africans insisted, they should receive financial compensation too.

Oxfam, Christian Aid and Cafod are all members of the Trade Justice Movement (TJM), which is calling for the WTO to allow developing countries to operate a policy of 'unfair trade' that would enable them to protect vulnerable domestic markets until they are more established. The TJM points out that there would be little risk of anyone starving in Africa if African nations were



able to protect their own farmers. Forcing deregulation on a continent ravaged by Aids, debt and natural disasters is, the alliance says, a blow below the belt. First World countries protected their markets to allow them to grow when they were first developing, and they still do so. So poor countries should be allowed to subsidise their farmers and trade on the open market at the same time.

Mark Ritchie is president of the Institute for Agriculture and Trade Policy (IATP), which promotes small and family farms around the world. He also stresses the need for a genuinely 'fair' trade system. Ritchie highlights the problem of cotton 'dumping' – the practice of nations buying up subsidised cotton and flooding the market with it. 'The level of cotton dumping is at a record high,' says Ritchie. 'A recent report has shown it to be as high as 50 per cent, which is as much of a disaster for US cotton growers as for those of other countries.' The US does not subsidise its cotton industry equally, but has a very complex system of rules by which it distributes the subsidies. The 10 per cent largest farms get three quarters of the subsidies; many smaller farms get nothing.

Overproducing cotton and selling it dirt cheap does not benefit smaller US farmers at all.

Ritchie points out that both Europe and the US are guilty of free-trade double-speak. 'Fair trade is mere rhetoric. It is the policy of rich countries to want to export but not to import.'

But while Oxfam is focusing on the need for the US to stop subsidising its cotton industry, the problems associated with the crop go far deeper. Emphasising unfair trade or the enforcement of WTO regulations ignores the ecological impacts of growing cotton. The crop contributes to roughly half of worldwide textile production, and it accounts for a staggering quarter of the pesticides used in the US. Cotton is sprayed eight to 10 times per season with pesticides and fertilisers that incorporate 15 toxins known to cause birth defects and at least nine carcinogenic chemicals. The clothes that we wear are dyed with toxic dyes and washed in formaldehyde. Many of the

“The US is illegally pumping money into its cotton farms to the tune of \$4 billion – more than the GDP of Burkina Faso... if they withdrew their cotton subsidies it would raise the price of cotton by 26 per cent”

chemicals used would be dangerous to eat, yet cotton seed is fed to beef and dairy cows, and thus finds its way into non-organic milk. And cotton oil is used in snacks and processed foods, too.

Cotton farmers in West Africa are often oblivious to these risks. Pesticide containers are used to drink water from, and children play with them as toys. Highly toxic synthetic pesticides such as DDT are distributed without proper precautions being taken, and without proper explanation of how they should be used. The pesticides are often used for unintended purposes, such as in the cultivation of food crops. Even if they are only used on cotton they can be easily diffused into the food chain and water supply by wind and water.

Not only that, but cotton farming is also very water-intensive; along with rice and wheat farming it accounts for 48 per cent of the world's water consumption. To make one kilogram of cotton lint requires 29,000 litres of water, making it the thirstiest crop on earth. Many activists are campaigning for a switch to hemp farming, which requires considerably less water.

To make matters worse, research into cotton growing in Africa is not set up to promote organic methods. Financed through government marketing boards, the research's goal is to maximise yields – not to help the individual producer. It is often subsidised by agrochemical corporations.

Thus, at least one generation of cotton researchers does not believe it is possible to grow cotton organically.

So, yes, Christian Aid, Oxfam and Cafod are right to advocate 'unfair trade'; poorer countries and farmers should be allowed to protect their industries and livelihoods, and so avoid starvation. But cotton highlights problems that will not be solved simply by regulating global trade. Those problems are rooted in the inherently destructive structure of global trade. Regulation will not change that structure. In the long term it is insane for countries without food self-sufficiency to depend on single cash crops. Brahimata Outtara says: 'I am praying for a better future.' Let's hope that the evangelical president of the US manages to tune into the same God as Outtara... and soon.

Fiona Campbell is a freelance journalist





ADOPT A VEG • Have you ever heard of – let alone tasted – the Rats Tail radish, the Crookneck squash or the

Supermarkets would have us believe that we eat a huge variety survives on only 30 crop varieties. In Britain alone we ha
 If any one of the remaining 3 per cent were to succ

Why does it matter

When people rely on just a few varieties of a single crop, disease can have disastrous effects.

From 1845 to 1846 Ireland's potato crop consisted of one or two closely related varieties. Both were wiped out by blight. In the ensuing famine, nearly a million people died and more than a million others were forced to emigrate. By 1851 Ireland's population had diminished by 23 per cent. If Irish farmers had been growing many varieties of potatoes with different genetic backgrounds the disaster would never have happened. And had a gene for blight resistance not been found among the thousands of potato types in South America it is unlikely that any potatoes would be grown in Europe today.



In the 1940s a French cauliflower variety was introduced to cauliflower growers in Cornwall. With its denser white curds, the French plant was much more popular. Soon the old Cornish varieties, which were resistant to fungal ringspot, were no longer produced. Ringspot is a recurring problem to this day, but the old Cornish variety has long been extinct.

In 1972 several varieties of corn in the US, all with similar genetic backgrounds, were killed off by blight. The country lost 15 per cent of its corn crop; in some southern states the loss was as high as 50 per cent.



Since crops today are so vulnerable, they are treated as disposable commodities. If one variety succumbs to disease, we simply move on to the next. A barley bred in East Germany was introduced to Ireland in 1982. Its resistance to disease was eroded within a couple of years, so it was replaced by the English-bred variety Blenheim. By 1994 this new variety also needed replacing.

Instead of working with nature by maintaining crop variety so as to counteract disease, we have increased the use of pesticides by 210 per cent since the 1970s. But disease can become resistant to pesticides. Mosquitoes' resistance to DDT, for example, began to emerge just six years after the pesticide's introduction.

Vanishing varieties

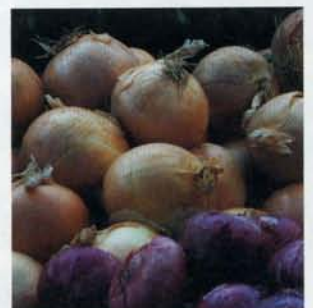
- 1 domestic tall pea still exists in Britain; 119 other varieties have disappeared
- 3 of the 550 varieties of pear available 100 years ago are still grown commercially
- 9 varieties of apple are available in the UK today; in the 19th century there were 2,000 varieties
- 50 traditional rice varieties were grown in China in 1970; 21 years earlier the figure was 8,000
- 75 per cent of the genetic diversity of crop plants was lost in the last century
- 80 per cent of the varieties of Mexican maize have been lost
- 97 per cent of the crop varieties once listed by the US Department of Agriculture have been lost in the last 80 years

Unlawful varieties

Under the Plant Varieties and Seeds Act of 1964 it is illegal to sell seeds that are not included on the UK national list. The costs of listing seed is prohibitively high. Annual application fees are £300, and the supplementary costs of entering and testing seed varieties can reach £2,100. The legislation has had two effects.

1 Unusual seed varieties were lost as small seed companies went bust. Unable to compete, companies sold out to larger rivals. For example, Rank Hovis bought 83 small companies in just one week when the legislation came into effect in 1980. Unfortunately, no incentives exist for the larger companies to supply the seed varieties that only small-scale farmers and gardeners demand.

2 Valuable genetic resources were lost. Restrictions demanded that only one strain of a traditional variety be entered on the national list. In the 1970s the onion varieties Hurst Reselected, Golden Globe, Nuttings Golden Ball, Cambridge Number 10, Sutton Globe and Up-to-Date were all listed as Bedfordshire Champion.



To find out more, write to Adopt A Veg, HDRA, Ryton Org



Prince of Prussia pea? Alexandra Abrahams reports on what is being done to save Britain's rich agricultural heritage of fruit and veg. In reality 90 per cent of the human population have lost 97 per cent of our fruit and veg varieties since 1900. Without the consequences could be devastating.

What's the solution?

Since agriculture began farmers have used the selective sowing of seed to encourage and develop a variety of traits in crops. Differing conditions between one farming community and another resulted in the development of locally adapted varieties. Eventually hundreds of thousands of distinct varieties of widely cultivated crops evolved. These varieties are known as landraces.



If disease struck there was enough variation within the crop to ensure at least some varieties were resistant and would survive. However, most crops today are genetically homogeneous and extremely vulnerable to being wiped out entirely if hit by an unknown disease.

One response to this loss of biodiversity has been the setting up of seed banks (frequently known as gene banks). Worldwide, there are now 1,300 banks containing around 6 million acquisitions.

In the UK, the Henry Doubleday Research Association (HDRA) recognised the problem as long ago as the 1970s. Dedicated to researching and promoting organic agriculture, the HDRA set up the Heritage Seed Library (HSL) in 1975 so as to conserve the seeds of endangered European vegetable varieties.

However, there are drawbacks to the seed bank approach to conserving biodiversity. Varieties stored in seed banks adapt to the conditions of storage and have to be replanted on a regular basis in order to regenerate viable seed.

The HDRA's seed library includes more than 800 different fruit and veg varieties. The organisation is continually increasing its collection by rescuing seeds as they are discontinued by seedsmen. What can you do?

- 1 Adopt a Veg.** With a donation of £10 to the HDRA's 'Adopt a Veg' scheme, you can help pay for the HSL's seed handling, storage and propagation facilities.
- 2 Become a member of the HDRA.** As a member you can choose six free seed packets a year from the HSL bank to grow yourself.

Vegetable varieties

VARIETIES YOU CAN BUY IN SAINSBURY'S:

Tomato

Cherry, Flavia, Plum, Pomodarino, Romalia, San Marzano, Sungold, Vittoria, Sainsbury's Tomatoes

Pea

Sugar-snap, Mange-tout, Garden, Little-big Sweet Peas, Sainsbury's peas

French bean

Sainsbury's French Green Bean, Continental Choice, Sainsbury's Green Beans, French

VARIETIES YOU CAN ADOPT FROM THE HDRA SEED LIBRARY:

Tomato

Auntie Madge's, Brandywine, Broad Ripple Yellow Currant, Cheetham's Potato Leaf, Cherokee Purple, Cyril's Choice, Czar, Egyptian, Essex Wonder, Golden Queen, Grandma Oliver's Green, Green Zebra, Iraqi Heart-shaped, Ivory Egg, Jersey Sunrise, Kenilworth, Madame Jarde's Black, Maltese Plum, Market King, Mrs Taylor's Yellow Pear, My Girl, Peacevine Cherry, Plum Fryer, Potato Leaf White, Ryder's Midday Sun, Salt Spring Sunrise, Scotland Yellow, Spanish Big Globe, Sub-Arctic Plenty, Sundrop, Thompson's Seedless Grape, Tiger Tom, Whippersnapper, White Princess, Yellow Oxheart

Pea

Carlin, Carruther's Purple Podded, Champion of England, Commander, Duke of Albany, Epicure, Gladstone, Glory of Devon, Gravedigger, Kent Blue, Lancashire Lad, Laxton's Exquisite, Magnum Bonum, Mr Bound's Bean Pea, Poppet, Prince of Prussia, Purple Podded, Simpson's Special, Table Talk, Telephone, Time Out of Mind, Veitch's Western Express, Victorian Purple Podded

French bean

Bird's Egg, Black Canterbury, Black Valentine, Blue and White, Brighstone, Caseknife, Cherokee Trail of Tears, Coco Bicolour, District Nurse, Early Warwick, Emperor of Russia, Ernie's Big Eye, Hutterite Soup, Jacob's Cattle, Kew Blue, Lazy Housewife, Parfree's Dragon Tongue, Pea Bean, Red Robin, Ryders Top O' Pole, Soldier



Does technology make our lives easier, or does it just make it easier for us to kill each other? Is prohibition of technology the only way to preserve our humanity or is it a dereliction of responsibility and an infringement of liberty? And does it have to be a case of Frankenstein versus the Unabomber?

THE DEBATE Bill McKibben vs Roger Highfield

Technology

will it save

“ Dear Bill,



Let's carry out a gedankenexperiment. Imagine you can wriggle through a wormhole, back some 2.5 million years or so, to an east African river valley. Flakes, fragments and fist-sized cobbles of rock litter the site. Thanks to their sophisticated control of stone-fracture mechanics, our ancestors have found a way to make sharp-edged cutting tools.

No one knows the size of the original tool-making population. Most likely it was in the region of hundreds of thousands, even low millions, though the occasional population crash probably reduced it to tens of thousands. Thanks to various technological revolutions – to do with tool-making, agriculture, industry and beyond – the earth's human population is now around 6 billion.

Although greens rage against technology – for the harm that it does to the environment, for creating extravagant wealth and enormous poverty simultaneously, and for much, much more, technology has had an amazingly positive impact on humanity. Since 1953 global life expectancy has increased from 46 to 64 years. World food production has doubled over the past 35 years, with only 10 per

cent more land being used. And daily labour has been alleviated with, on global average, a per-capita energy subsidy of 14 times that needed for basic metabolic needs (which is all that was required in hunter-gatherer days).

But let's stay in east Africa. Meet Ugg, a clan elder with influence – the Stone Age equivalent of those high-status multi-millionaire greens who like to lecture today's hoi polloi. Ugg is impressed by how these tools make it easier to strip a carcass or kill an auroch. But he is troubled, too. They also make it much easier for his brothers and sisters to murder each other. Using grunts and signs, he tells his tribe to give up using tools – just as a precaution.

There is nothing intrinsically good or bad about a technology, whether it is GM or nanotechnology, just what we do with it

The same debate rages today. But there is nothing intrinsically good or bad about a technology, whether it is GM or nanotechnology, just what we do with it. I am all for banning harmful GM or destructive nanotechnology. Equally, I am

all for using GM that reduces the use of chemicals, or for donning surgical outfits laced with silver nano-particles that kill superbugs.

Think what would have happened if the Uggs had managed to demonise the idea of tool-making in our ancestral cultures. Billions of people never would have existed. Doom-laden environmentalism snuffs out human life just as surely as reckless technophilia.

Today, technology is a victim of its own success. The global population is placing unbearable pressure on the environment as developing countries – understandably – aspire to the extraordinarily wasteful lifestyle of the First World. Yet even though population growth is the mother of climate change, wars, habitat loss and extinction, many greens would rather attack technology than treat it as a tool that can help us preserve vast variety at the same time as we pursue our big and legitimate demands for farms, roads and factories.

I know that you, Bill, are worried about overpopulation. If only the same were true for everyone. Google 'Greenpeace' and 'overpopulation', and you get a measly

2,000 or so pages to choose from. Friends of the Earth does better, with 12,000. Key them in with 'GM', and you get 60,000 and 121,000 hits respectively. Now try 'nuclear', and you get a massive 119,000 and 340,000. Like multinational companies, multinational NGOs can be slaves to the market at the expense of focusing on what is really important. There are not many subscriptions to be had in preaching family planning values.

Google 'Friends of the Earth' and 'Greenpeace' with 'natural', and you get a massive 996,000 and 155,000 pages, respectively. The two organisations fear the unnatural impact of technology and hanker after all that is natural. Which Eden would you like, Bill? The deep freeze of snowball earth, 650 million years ago? How about 2.3 billion years ago, before earth's methane-rich atmosphere was polluted by

oxygen? Or 3.9 billion years ago, when the great asteroid bombardment took place?

Thinkers as diverse as Sigmund Freud, Friedrich Engels and Thomas Carlyle thought that the use of tools was a defining behaviour of human beings. Then scientists discovered that technology is natural. Many animals also use tools – from the 'fishing sticks' of apes to the rocks dropped on ostrich eggs by Egyptian vultures and the innovative equipment of the New Caledonian crow.

We have gone a long way beyond the crow's stepped pandanus leaf tools. We have technologies with awesome power, though we have not yet created GM people, cyborgs or self-replicating nanobots – let alone the nuclear-powered vacuum cleaners wielded by robot maids we were once all supposed to have.

Technologies will have unforeseen

effects. Some will be good; a few may well be a disaster. I don't want to ban them all, because I have faith we can sift helpful from harmful applications thanks to our brain power, the altruism that enables human societies to survive, our ability to gossip (which makes it hard for conspiracies to thrive) and to shout 'yuck!' when technology goes too far. Human nature ensures we can handle the responsibility for technology – a burden that fundamentalist greens would rather we shirked. ”

“ Dear Roger,



I've had the pleasure of meeting straw men before, but never a Neolithic straw man. I think the experience of Ugg confronting flaked tools has virtually nothing to teach us, so let me propose instead that we consider Dugg, or maybe Doug. He lives in the early part of the 20th century, and has not only a knife but also a microwave, not to mention a car and a house. Like most of us in the West, he lives a life of great ease and comfort. He can anticipate living into his 80s, most of those years free of debilitating disease. He can give thanks to technology for some of those achievements. The interesting question is: does he need a quantum increase in technological power, or would he be better off foregoing it?

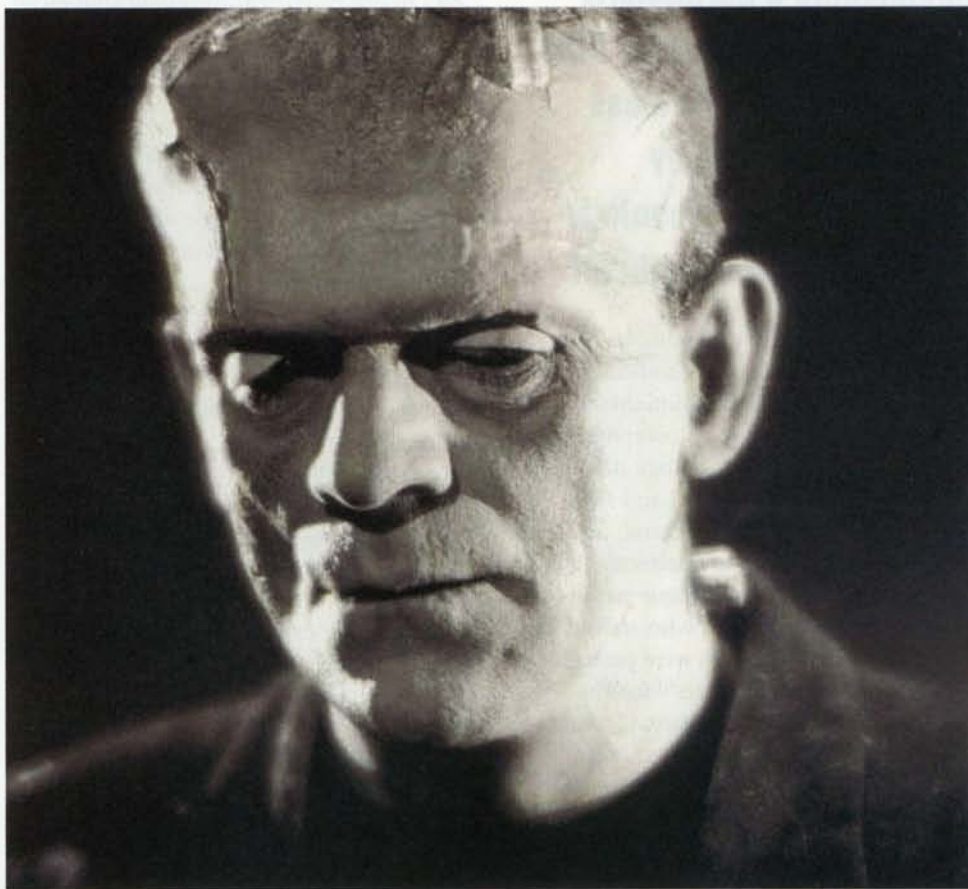
One of the key words here is quantum. You acknowledge in your final paragraph that new technologies will have 'unforeseen effects', and say that you don't want to 'ban them all'. Nor does anyone else this side of the Unabomber. What environmentalists have noted is that

None of the futurists eager to engage in human genetic manipulation even bother to pretend that its benefits will reach beyond the wealthy

some technologies are more dangerous – physically or metaphysically – than others, and that it would be wise, therefore, to forego them.

Consider genetics. No one that I have met thinks we should bury our knowledge of DNA, or that we should stop trying to exploit that knowledge in useful ways. There's almost universal support for the idea of so-called somatic gene therapy – using healthy genetic material to treat *existing* patients with *existing* problems. But many governments, scientists, human rights campaigners and just plain people have decided that we should draw a technological line at germ-line gene manipulation –

Save us or kill us?



tweaking the chromosomes of a foetus in an effort to 'improve' the resulting child.

Why? For many reasons, perhaps the least of which is that it will go 'wrong' and result in mutant Frankensteins. Much worse is the prospect of it going 'right'. Say we follow the advice of James Watson, the most important geneticist our planet has yet produced, and use this germ-line technology to make sure there are 'no more stupid people', to eliminate 'shyness' and other emotional traits, and to banish 'ugly babies' for ever. Will the world be better off? I doubt it, any more than I think the world would be better off if Prozac was poured into every reservoir.

Our technologies have gotten powerful enough that they begin to threaten human meaning. And to threaten human societies in ways Ugg could never have imagined. For instance, none of the futurists eager to engage in human genetic manipulation even bother to pretend that its benefits will reach beyond the wealthy. (We have whole continents where we can't bother to provide people with bed-nets so they won't get malaria. Anyone anticipate that we'll be building IVF clinics there any century soon?) As a result, they concede that one clear consequence of instituting this kind of work will be to forever divide the human race. Lee Silver, a Princeton geneticist who has written and spoken widely in the field, insists that there will soon be two types of people: 'Gen Rich' and 'Naturals'. Before long, he calculates, their genes will have diverged widely enough that they will in fact have speciated, and no longer be able to interbreed. He considers our use of the technology, and hence this fate, inevitable. I consider it worth fighting against.

Back to Doug. What in his life should impel him to want his society taking such risks? The chance of illness? Well, medicine continues to make steady advances against disease without crossing these kinds of thresholds. Even in the early years of this century we've learned how to target anti-cancer drugs much more efficiently, dramatically increasing survival rates. But even if we had a way to eliminate cancer and heart disease entirely, Doug's likely lifespan would increase by just a few years. Even if we eliminated all causes of death noted on death certificates, the increase in life expectancy would be far smaller than that achieved in the 20th century (mostly through the minimalist technology of better sanitation). In other words, we're already pretty near our max.

And is Doug's life so hard that he needs a quantum increase in labour-saving – say with the combination of nanotechnology and advanced robotics that many of our futurists increasingly see as the next wave? I don't think so – pressed for a real need for his product, Rodney Brooks, the director of the Massachusetts Institute of Technology's Artificial Intelligence Laboratory and perhaps the planet's leading roboticist, says: '[I get] annoyed at all the fluff that accumulates on my TV screen. The dust. Well, what if you could buy 20 robots for a dollar in a little bottle, empty this bottle onto your TV screen, and while it's on they absorb electrons from the screen? When you turn it off,

they each scurry out and scrub a corner of the screen. It sounds crazy by today's standards, but...'

Actually, it sounds crazy by any standard. To embrace a technology that in its advanced forms all but promises human obsolescence ('those of us alive today, over the course of our lifetimes, will morph ourselves into machines,' says Brooks) in order to avoid wiping your TV screen with a damp cloth is almost a definition of insanity.

So your move. Forget Ugg – there's no danger that we're going to return to living in caves. Think about Doug. Tell us why we must roll the dice on the next set of quantum leaps in technological power. Feed the world? Human immortality? And make sure that your goal, whatever it is, will be best achieved by more technology and not less.



Dear Bill,

Ugg is no straw man, as you assert without explanation, but a confused do-gooder – just like you. Even though technological power is increasing by leaps way beyond that of a measly quantum, the problems we confront now are no different from those faced by Ugg. We don't need daft fluff-bots



Abandoning a particularly 'dangerous' technology kills, maims and hurts endless future generations by preventing that technology from doing any good at all

and improbable sci-fi to remind us of problems we have faced for millennia. The real issue currently facing humankind, one you don't even mention, is overpopulation.

The downside of technology has been obvious since we made flints and fires. Primitive societies, those 'natural' ones you secretly hanker after, were perfectly capable of causing havoc without rogue nanobots or GM viruses. Aborigines who arrived in Australia 50,000 years ago were probably responsible – by setting fires – for the demise of Australia's 'megafauna', which included carnivorous kangaroos and tortoises as big as a Volkswagen Beetles.

If you had been around then, your concerns about crossing technological thresholds would have made you banish

fire. For every gloomy application of technology that makes you and Ugg fear that the risks posed by innovations are too great, I can quote you endless beneficial uses. We were born to invent and your forlorn cry that enough is enough has a Canute-like futility.

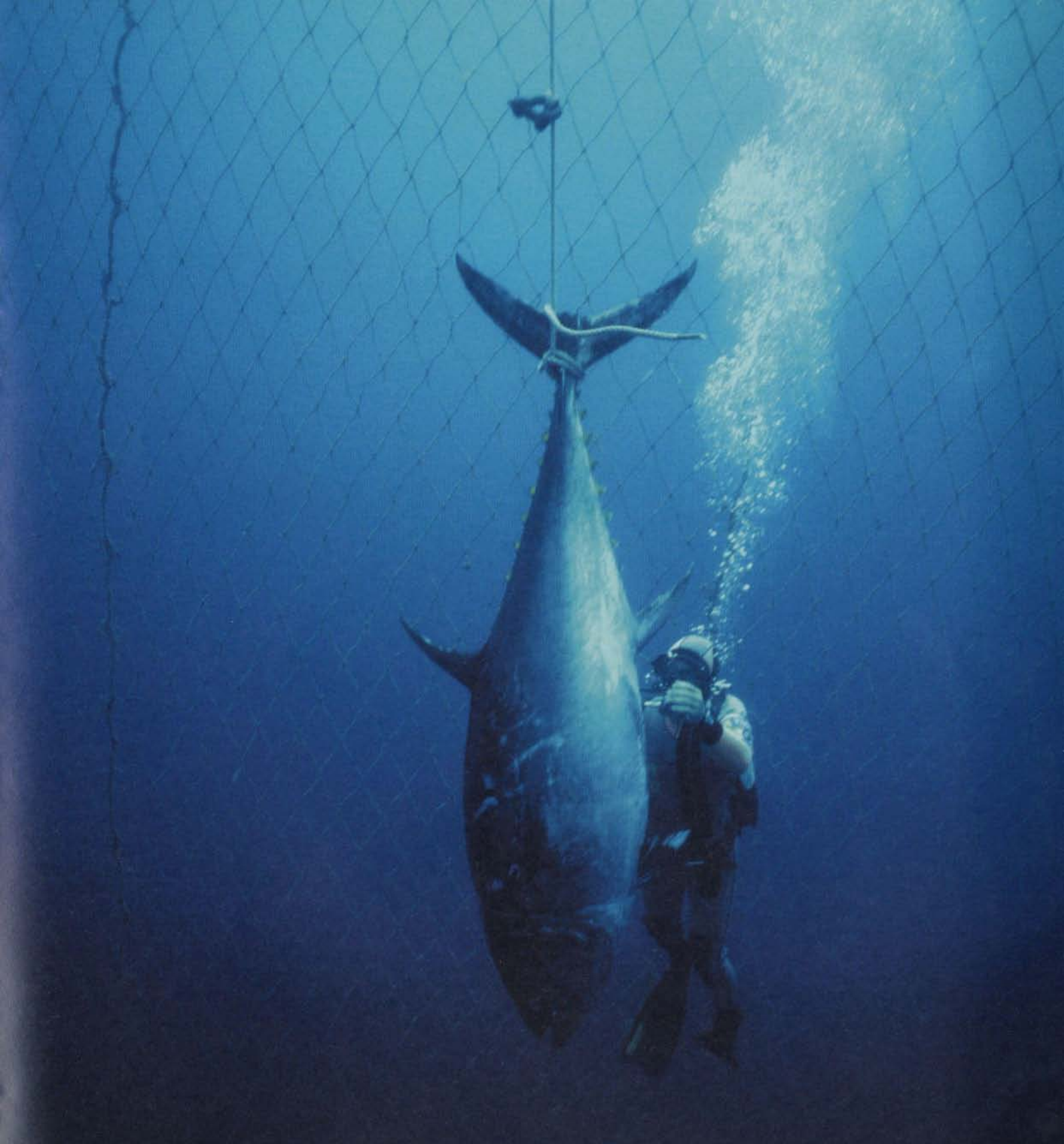
You are particularly fearful of genetic engineering, but I think you misunderstand where Watson is coming from. Sure, he loves to wind us up with provocative statements about genetic enhancement. Like you, I believe that a line should be drawn between enhancement and therapy. Unlike you, I believe we should develop safe germ-line therapy and allow society to decide how and when it should be used. You focus on risks without mentioning the benefits of germ-line therapy. Watson's son, Rufus, has a mental disorder. If there was a way to fix it, Watson would seize it – like any loving parent. He is mystified why there is so little discussion of using germ-line therapy to banish grim diseases.

And Watson would be the first to accept that using gene tinkering to alter emotional traits, which are influenced by constellations of genes, is more 'fi' than 'sci'. Genes work with the environment, so improving education is still the smartest way to rid the world of dumb people. And as for your fears about a dystopian world of genetic haves and have-nots, get real Bill! That's the world we live in – not Doug's Stepford society. Think of those born with the 4,000 or so single-gene disorders, or all those people who die prematurely of cancer every year.

Every time I hear calls for blanket curbs on genetic technology, I think of the heart patient who died waiting for a transplant as anti-vivisectionists championed the rights of xenograft pigs, or the mother forced to watch her son suffer because fundamentalists took legal action to prevent her from having what they (wrongly) call a 'designer baby'.

Because all technology does stuff, it is all potentially dangerous. Let's leave it to society to judge how to use it wisely. Abandoning a particularly 'dangerous' technology kills, maims and hurts endless future generations by preventing that technology from doing any good at all. Why should we lose our freedom to choose? That's so much scarier than your Frankenstein scenarios.





SPECIAL REPORT

Bluefin Tuna



The magnificent b

Richard Ellis celebrates the beauty of one of nature's most miraculous, and least appreciated creatures – the bluefin tuna

To me, he seemed enormous, supremely beautiful and unattainable. He flashed purple, bronze, silver-gold. When he went under he left a surging abyss in the water, a gurgling whirlpool.'

So wrote Zane Grey (right) of one of his many attempts to land a bluefin tuna. Grey, better known as an author of popular western novels

in the 1920s and 1930s, was a passionate big-game fisherman, spending most of his not inconsiderable royalties (his books sold 13 million copies) on fishing trips, boats, and gear. In *Tales of Swordfish and Tuna* (1927) he described his battles with giant bluefin, first in California – and then in Nova Scotia waters.



'I was struck dumb by the bulk and beauty of that tuna.' Grey wrote. 'My eyes were glued to his noble proportions and his transforming colors. He was dying, and the hues of a tuna change most and are most beautiful at that time. He was shield-shaped, very full and round, and high and long. His back glowed a deep dark purple. His side gleamed like mother-of-pearl in a lustrous light. His belly shone a silver white. The little yellow rudders on his tail moved from side to side, pathetic and reproachful reminders to me of the life and spirit that was



Bluefin

passing. If it were possible for a man to fall in love with a fish, that was what happened to me.'

And me. For more than 30 years, I have been studying and writing about the inhabitants of the oceans – from sharks, whales and dolphins, to giant squid, deep-sea fishes and even the lost citizens of Atlantis. But nothing has moved me as much as the plight of the great fish that is so 'enormous, supremely beautiful, and unattainable'.

The fastest fish in the sea

The bluefin (*thunnus thynnus*) is the

CORBIS oceans' nobility, described by Carl Safina as 'half a ton of laminated muscle rocketing through the sea as fast as you drive your automobile... among the largest and most magnificent of animals'. Its body is a slick, scaleless teardrop, with slots into which it can fold down its dorsal and pectoral fins. Along the narrow tail-stock there is a series of finlets, the function of which is not clearly understood but which probably have something to do with reducing turbulence as the fish rockets through the water. The 'drive train' of the tuna consists of a crescent-shaped tail that is moved from side to side by powerful muscles. (Most other fishes move the after-part of their bodies, but the tuna propels itself by moving only its tail.)

As a result, the bluefin is the fastest fish in the sea – with a highest recorded speed of 70.4 kilometres an hour over a 20-second dash, and reported bursts of speed of up to 104 kmh. It is the largest of the tunas – and one of the largest of all fishes, reaching a length of 12 feet and a weight of three-quarters of a ton. (The International Game Fish Association record for a bluefin

caught on rod and reel is 1,496 pounds, about the equivalent weight to three fully-grown gorillas.) In short, *thunnus thynnus* is the ne plus ultra of fishes; the most beautiful, the most streamlined, the most powerful of them all.

Not only does the bluefin swim incredibly fast, it also makes some of the longest migrations of any fish. Specimens tagged in the Bahamas have been recaptured in Newfoundland, Norway and even Uruguay. The northern bluefin ranges across the entire north Pacific, migrating from California to Japan and back, sometimes detouring as far south as New Guinea. The southern bluefin, *thunnus maccoyii*, lives only in the southern hemisphere and makes similarly large migrations. Along the way, bluefins feed on mackerel, herring, mullet, whiting, eels and squid. Nothing can outpace a tuna. ▶

I was struck dumb by the dying tuna's beauty. Its tail flicked from side to side, a pathetic reminder of the life and spirit that was passing



One man's meat

Unfortunately for the bluefin, its dark red flesh is perceived by the Japanese as the most desirable of all fish products.



As the central and most esteemed component of sushi, high-quality tuna is greatly sought after. When the fish are sold off in the marketplace, hordes of buyers cluster round the dead animals – sniffing, tasting and pressing the fishes' flesh between their fingers in a relentless hunt for the ideal fat content. To aid this search, the tail is removed, sliced away so that a cross section of flesh is revealed to enable people to assess

the structure and colour of the whole fish.

There are three kinds of tuna commonly used for sushi and sashimi – bluefin (hon maguro), southern bluefin (minami maguro) and bigeye (mebachi). The fatty part of tuna's stomach is called 'toro' in Japanese, with 'O-toro' considered the most prized and expensive part of the tuna, like tenderloin of beef. There is also small part called 'sunazuri' within O-toro. The texture

'In 2001 a 444-pound bluefin sold for a record \$173,600 at Tokyo's main fish market

of sunazuri is marbled with thin lines of fat.

The whole procedure epitomises the Japanese concept of kata. 'Kata,' writes *Global Sushi* author Theodore C Bestor, 'is the notion of the ideal form. It is the ideal of a flawless specimen of silver salmon, or a shipment of lobster that is perfectly matched in colour, weight and claw size. Kata also is the process that results in an ideal outcome – the fluid and precise

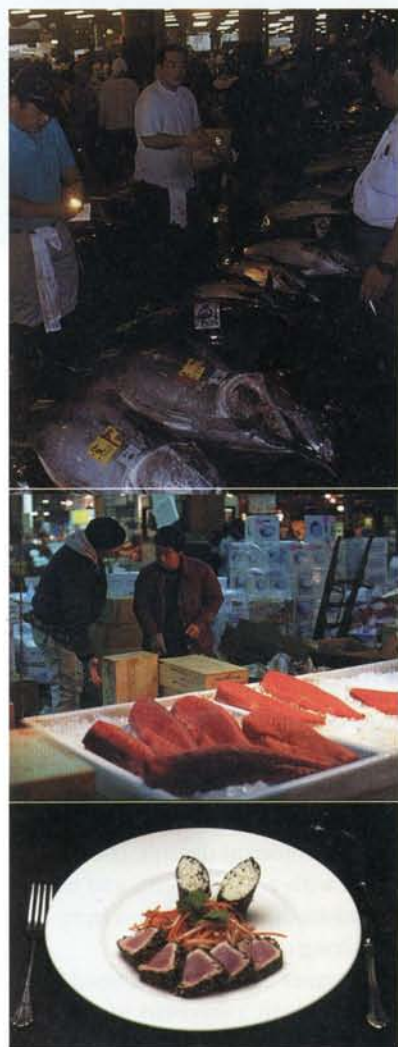


CORBIS

moves of a master sushi chef as he fillets a block of bluefin, or the way he arranges a tray of sea-urchin roe.'

When consumers believe they have found the ideal form of tuna, they are willing to pay prices to match. In 2001 a 444-pound bluefin sold for a record \$173,600 at Tokyo's main fish market.

With such a high price on their head, bluefins are being fished to extinction. Their north Atlantic breeding populations are estimated to have declined by about 90 per cent in the last 20 years. As with all fish populations, exact counts are impossible. But the rarer the bluefin becomes, the higher its price rises. And as the price rises further, so the fishermen strive ever harder to find more fish. The bluefin tuna has found itself a cruel victim of market economics. ■



TUNA FISHERIES AROUND THE WORLD

Carl Safina describes the devil-may-care approach to regulation of the world's major tuna fisheries

The western Atlantic bluefin

The western Atlantic bluefin is the most depleted species in the Atlantic tuna commission's portfolio. West Atlantic bluefins were fished intensively in the 1960s by purse seiners targeting small fish for canneries. In the 1970s commercial targeting switched to large fish for export to Japan.

In 1981 Iccat (the International Convention for the Conservation of Atlantic Tuna) concluded that the western Atlantic's bluefin tuna population was seriously depleted and that catches 'should be reduced to as near zero as feasible'. The commission's managers set a 1,160 metric ton annual quota for 1982, ostensibly for 'scientific monitoring' purposes. But the next year, responding to political pressure from commercial interests, the commission more than doubled this 'scientific' quota to 2,660 metric tons.

By 1990 the bluefin breeding population stood at an all-time low. Conservation groups got involved in 1991, pursuing an international ban on bluefin trade through the Convention on International Trade in Endangered Species. In 1992 the tuna commission agreed to halve its West Atlantic bluefin quota, but gave itself two years to phase the cut in.

Exploiting this interval, the US fishing industry hired lobbyists with access to top members of Congress. They influenced the US's National Research Council (NRC) to convene a review, which confirmed the history of depletion. But the NRC highlighted the fact that in the previous five years the bluefin population appeared to have stabilised (albeit at or near all-time lows). Industry lobbyists seized upon this finding of 'stabilisation'. And Iccat – led by a US commissioner who is a fishing-industry-paid lobbyist – used the 'stabilisation' finding to justify rescinding the 50 per cent quota cut. After that, the commission increased the quota again to approximately where it had been from 1983–1992, when the breeding population had been roughly twice as large (but in continual decline). The spawning population now is about 10 per cent of what it was just prior to the Atlantic tuna commission's formation in the mid-1960s.

The eastern Atlantic bluefin

Catches in the eastern Atlantic and Mediterranean are far less controlled than in the west, exceeding 48,000 metric tons in recent years. In 1994 Iccat agreed to prohibit large longliners from operating in the Mediterranean in June and July. The longliners simply ignored the rule. Small fish are also under

heavy pressure. Fish weighing less than 6.4 kilogrammes constitute 40 to 60 per cent of overall catches in the east Atlantic and Mediterranean.

In 1994 the commission recommended a 25 per cent reduction in bluefin catches in the East Atlantic and Mediterranean. But recent catches are higher than in 1994, and the eastern Atlantic bluefin population is considered severely over-fished.

Southern bluefin

Southern bluefin have been heavily exploited for nearly five decades, mainly by Japan and Australia. The catch peaked back in 1961 at 81,605 metric tons, with Japanese longlines taking almost all of it. By 1980 the catch nearly halved to 45,000 metric tons.

Australia, New Zealand, and Japan have had a quota system since 1986. The first annual quota of 38,650 metric tons was too high to avert continued decline.

In 1994 these three countries formed the Commission for the Conservation of Southern Bluefin Tuna (CCSBT). This was in part due to increasing scrutiny by environmental groups that were discussing action to ban the international trade in the bluefin.

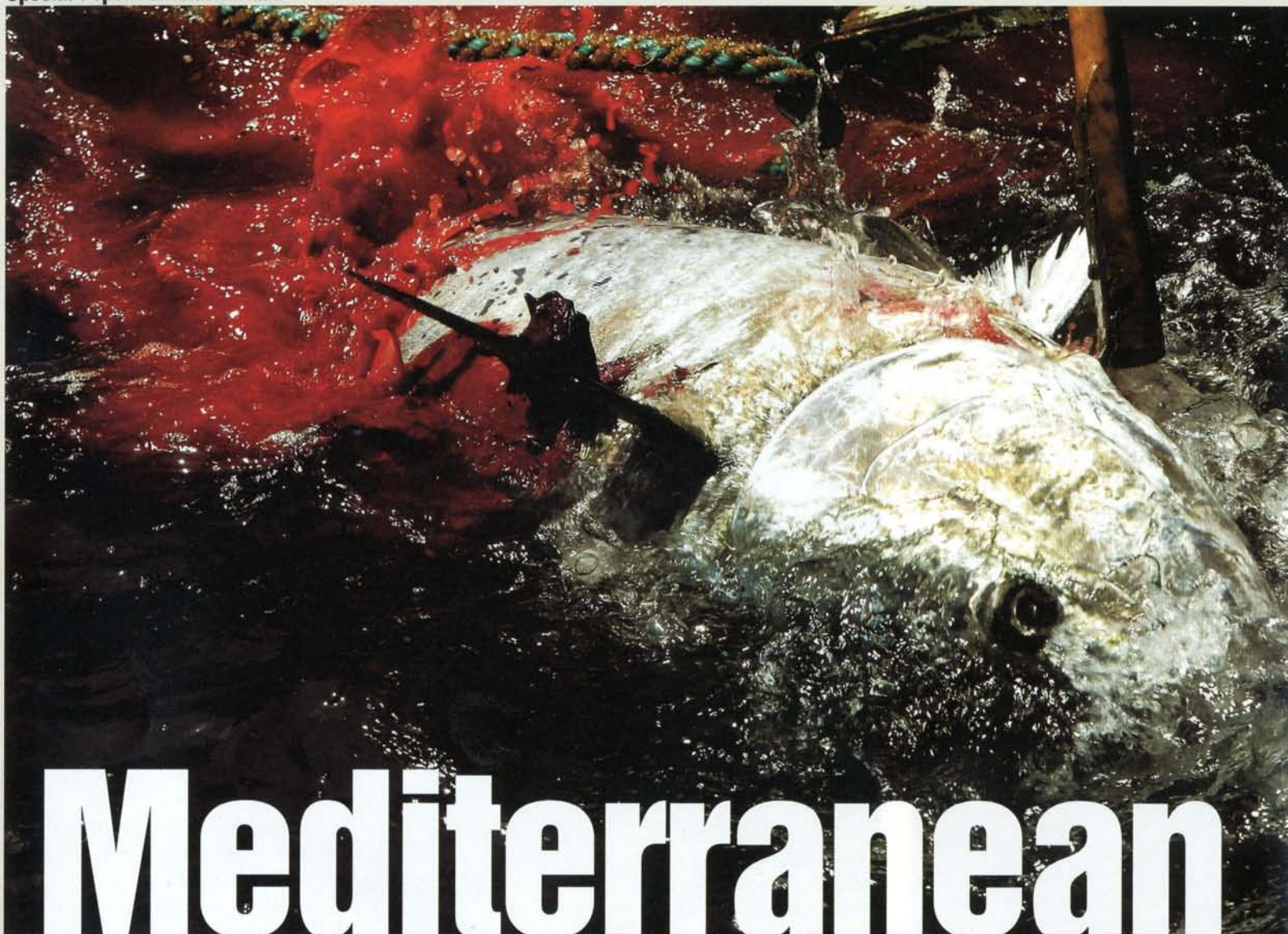
Countries not party to the CCSBT (like Taiwan, Indonesia and Korea) also catch southern bluefin. As with most other bluefin fishing, this sector of the market is driven by Japan. So Japan could limit imports as a way of forcing other nations to abide by CCSBT conservation measures.

Unfortunately, Japan does not itself appear to support CCSBT conservation measures. In 1998 it intentionally broke its bluefin quota by more than 25 per cent, using 65 vessels fishing off Australia's west coast.

So in 1999 Australia and New Zealand used the UN Convention on the Law of the Sea to take Japan to court in Germany. Japan claimed that its 'experimental' bluefin tuna fishing programme was 'scientific' and not bound by the quota system. The two plaintiff countries claimed that increased fishing by Japan threatened 'serious or irreversible damage to the southern bluefin tuna population'. They succeeded in gaining a temporary injunction to halt the Japanese over-fishing.

Carl Safina is director of the Living Oceans programme at the New York-based conservation organisation the Audubon Society. His books include Songs for the Blue Ocean: along the world's coasts and beneath the seas (Henry Holt & Co. 1996)





Mediterranean massacre

Seeing bluefin tuna gaffed is like watching a thoroughbred racehorse being hacked to death with an axe.

By Richard Ellis

The bluefin were to ancient Mediterranean peoples what the buffalo were to the American plains Indian,' writes Theresa Maggio in her brilliant little book *Mattanza*. The book charts the history of Sicily's annual tuna harvests, or *tonnara*, from the time of the Carthaginians and Phoenicians five centuries before Christ right up to the present day. (*Mattanza* is an Italian word that means 'killing'.) Maggio describes tuna fishing as 'a yearly miracle, a reliable source of protein from a giant animal [the people of the Mediterranean] revered, one that passed in such numbers that the cooperation of an entire tribe was needed to kill and preserve [its] meat'. 'Around the Mediterranean,' says Maggio, 'the migrating bluefin was a staple food for entire civilisations.'

Describing the second-century *tonnara* in *Haliutica*, the Greek poet and naturalist Oppian wrote: 'Dropped in the water are nets arranged like a city. There are rooms and gates and deep tunnels and atria and courtyards. The tuna arrive in great haste, drawn together like a phalanx of men who march in rank. There are the young, the old, the adults. And they swim, innumerable, inside the nets, and the movement is stopped only when there is no more room for new arrivals. Then the net is pulled up and a rich haul of excellent tuna is made.'

Today, there are only two *mattanza* remaining. The more famous of the two is that of the

village of Favignana, which is located on one of the Egadi islands off the western tip of Sicily. The Favignana fishermen deploy a complex arrangement of gigantic nets along the tunas' expected route, and wait for the great fish to swim into them. Maggio says the trap used at Favignana 'is divided into seven rooms by net walls with gates in them'; it is '50 meters squared'. The last 'room' the tuna will ever see is the *camera della morte* (the 'chamber of death'), the only room with a net bottom, and which the *tonnaroti* raise by hand from 75-foot-long open boats.

Jacques Cousteau described his experience in a Tunisian tuna net in his 1953 book *The Silent World*. The

Tunisian death chamber is called a *corpo*. Cousteau wrote: 'Marcel Ichac filmed the spectacle from a boat above the *corpo*, while Dumas and I dived into the net to record it below.

'Sunk in the crystalline water we could not see both sidewalls of the *corpo*, and imagined that the fish could not, either. We had unconsciously taken on the psyche of the doomed animals.

'In the frosty green space we saw the herd only occasionally. The noble fish, weighing up to 400 pounds apiece, swam around and around counter-clockwise, according to their habit. In contrast to their might, the net wall looked like a spider web that would rend before their charge, but they did not challenge it.

'Above the surface, the Arabs were shrinking the walls of the *corpo*, and the rising floor came into view... The death chamber was reduced to a third of its size. The atmosphere grew excited, frantic. The herd swam restlessly faster, but still in formation. Their eyes passed us with almost human expressions of fright.

'My final dive came just before the boatmen tied off the *corpo* to begin the

killing. Never have I beheld a sight like the death cell in the last moments. In a space comparable to a large living room tunas and bonitos drove madly in all directions. It took all my will power to stay down and hold the camera... With the seeming momentum of locomotives, the tuna drove at me, head-on, obliquely and crosswise. It was out of the question for me to dodge them. Frightened out of sense of time, I heard the reel run out and surfaced amidst the thrashing bodies. There was not a mark on my body. Even while running amok the giant fish had avoided me by inches, merely massaging me with backwash when they sped past.

'The fishermen struck at the surfaced swarm with large gaffs. The sea turned red. It took five or six men whacking gaffs into a single tuna to draw it out, flapping and bending like a gross mechanical toy. The boats rocked with convulsive bleeding mounds of tuna and bonitos.'

I have never seen a *mattanza* myself, but I have seen films of the ritual. The sight of sleek and graceful bluefins being gaffed is heartbreaking. One moment they are on what Cousteau called their

'honeymoon', and the next they are thrashing in a panicked *mêlée* as heavy steel hooks are smashed into their bodies and they are hauled ignominiously from the only element they have ever known into the one where they will die. Bluefins are among the most powerful and beautiful of the oceans' top predators, and seeing them gaffed is like watching a thoroughbred racehorse being hacked to death with an axe.

Decline of an industry, death of a fish

The *tonnare* once constituted one of Sicily's most important and profitable industries. But diminishing numbers of tuna and market laws that have made the practice more capital-intensive mean there are only about 10 *tonnare* left in the Mediterranean. What was once a source of pride (not to mention income) for entire communities has now turned into a tourist attraction, providing a few makeshift jobs. The practice is only kept alive by the obstinate will of the remaining *tonnaroti*. Almost all of the tuna caught in Favignana is shipped to Japan; all of Sicily's canneries have closed. ■

'The sea turned red. It took five or six men whacking gaffs into a single tuna to draw it out, flapping and bending like a gross mechanical toy'



Factory ships, 100 mile long fishing lines, nets larger than the Millennium Dome – can the bluefin tuna survive?

Facing extinction

Sicily's *tonnare* may have been brutal, but they were nothing compared to what has taken their place. Over the last 30 years, ever more industrialised fishing practices have drained the seas of fish in volumes that make the *mattanza* seem as intensive as bouncing a ping-pong ball into a bowl at the fairground. Nets wide enough to encircle the Millennium Dome, fishing lines

100 miles long with thousands of hooks that catch not just tuna, but sharks, seals, albatrosses and anything else unfortunate enough to be lured towards them, doppler counters to detect changes in the water's movement and even satellites spotting shoals of fish from space have all played their part in emptying the oceans of their once bountiful life.

Despite years of awareness of the impact of modern fisheries, despite countless organisations devoted to protecting fishing stocks, despite apparently increased consumer interest in environmentally sustainable food, the trend for intensification shows no sign of abating. Rather, a loophole big enough to drive a factory ship through has been discovered in the regulations



ion

governing Mediterranean bluefin tuna fishing, and it could signal the total extinction of the Mediterranean's bluefin population within a few years.

While there are strict quotas on the number of fish that can be caught in nets or by harpoons, there are no regulations whatsoever applied to the practice of 'post-harvesting'. The latter involves catching wild tuna and keeping them in pens before they are slaughtered. There are post-harvesting 'farms' in the waters off Spain, Italy, Malta and Croatia. These farms accounted for 11,000 tons of tuna caught in 2001. (Over the same period, the haul from direct fishing in the whole of the Mediterranean was 24,000 tons.)

More than 90 per cent of the post-harvested tuna goes to Japan. The appetite of the Japanese for tuna belly-meat is insatiable. 'If nothing is done,' says Paolo Guglielmi of the WWF's Mediterranean Programme, 'wild bluefin tuna will completely disappear from the Mediterranean.'

Post-harvesting has completely reshaped fishing in the Mediterranean, and the fish are much the worse for it. Not only are the tuna threatened, but the fish caught to feed them while they are in the pens are also being fished to destruction. Almost all the countries that fish for tuna in the Mediterranean are switching over to farming. In each country the purse

FACTORY FISHING 1

Longlines

Longlining consists of deploying a single line that may be 100 miles long and which is supported along its length by floats. Dangling from the longlines are about 2,000 hooks on 'branch lines' that can be adjusted to fish at depths of up to 500 feet. Longlining accounts for about 30 per cent of the world's catch of fish, deploying some 750 million hooks annually into the oceans. Longlining incurs significant bycatch and discard of sharks, fishes, undersized, prohibited and protected species, and various mammals, birds and turtles.

In western north Atlantic pelagic longline fisheries discards range from 40 to 65 per cent of the catch. About half of the bycatch is already dead before it is cut free. The species affected include wahoo, various sharks, undersized swordfish, cetaceans and turtles. Western Pacific longline bycatch species include over 21 species of sharks, six species of billfishes and 28 other fishes. Threatened and endangered marine turtles are occasionally caught and most are released alive, but an estimated one-third die from ingested hooks. Longline bycatch is one factor threatening the critically endangered Pacific leatherback turtle.

Tuna longlines often catch as many sharks as tuna. The sharks are routinely killed for their fins. Total high-seas longline bycatch of sharks has been estimated at 8.3 million animals annually.

Longlining kills seabirds throughout temperate and high-latitude regions, endangering some albatrosses. In the 1990s the Japanese southern bluefin tuna fleet alone was estimated to be killing 44,000 albatrosses annually. During the 1980s the southern bluefin tuna fishery annually killed 2-3 per cent of adult wandering albatrosses and 14-16 per cent of juveniles breeding at South Georgia. Longline fishing for southern bluefin tuna also affects wandering albatrosses breeding on the Crozet Islands in the southern Indian Ocean.

Given that albatrosses take bait that might otherwise be eaten by a tuna worth thousands of dollars, the fishing industry has some financial stake in developing and using methods to discourage birds from getting near baited hooks. And yet they haven't.

The US has closed significant large areas to longlines so as to reduce mortality to albatrosses and turtles, and has banned killing sharks for just their fins. Several other countries, including New Zealand and Australia, also require bird-protection techniques. But throughout the world, tuna fishing means catching many other things beside tuna.



FACTORY FISHING 2

Purse Seining

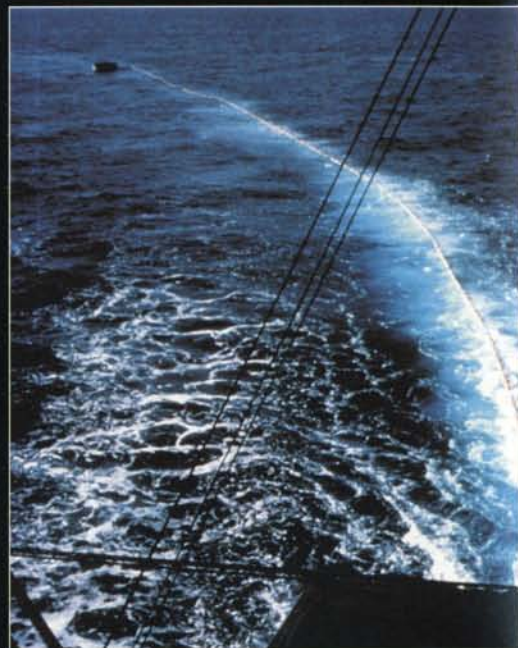
Purse seining involves drawing a large net around a school of fish and drawing it up like a purse, with the fish and anything else caught within its reach trapped inside. Purse

seine technology and efficiency increased substantially during the 1980s and 1990s, with innovations like bird-locating radar (to detect flocks of birds feeding on small

fish driven to the surface by hunting tunas), omni-scan sonar to detect deep tuna schools), Doppler current meters (to detect the structure of currents below the surface), radio



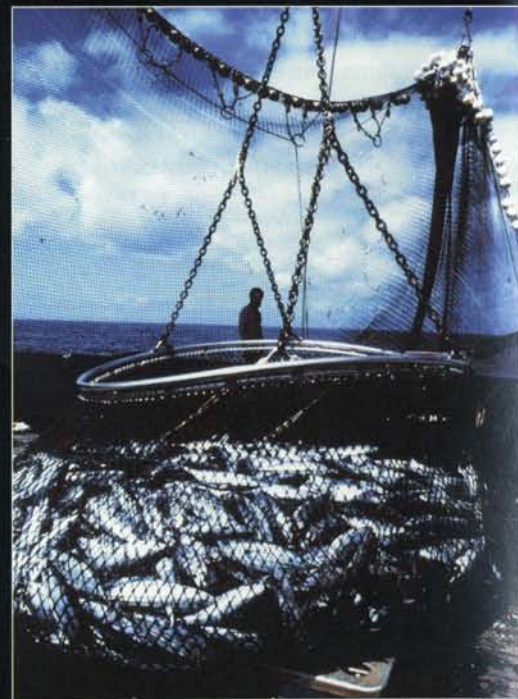
French tuna purse seiner F/V KERGUELEN at Mahe, Seychelles. Note helicopter on flying bridge. It is used to visually search for schools of tuna.



Once a school of tuna is spotted the workboat is sent out to encircle the area with the purse seine net.



After closing the net and trapping the fish, the net is now run through the powerblock and then laid back on the stern of the fishing vessel.



Once the net is on board and the operation of collecting the fish begins.

buoys, net depth recorders, deeper nets, more powerful winches, increased storage capacity and floating devices that attract and concentrate fishes.



Encircling complete, the end of the net is brought back to the ship so that hauling in can proceed.



The large basket is dipped repeatedly into the water to bring the fish on to the boat.

seine catches have declined while the total catch has increased. The entire catch of the Croatian tuna fleet (increased from 19 boats in 1999 to 30 in 2000) consists of undersized fish destined for the pens.

The WWF says: 'In the Mediterranean tuna farming started just a few years ago, but estimated production in 2001 gives an indication of the huge development of this activity in the region. Production in the Mediterranean is likely to make up more than half of the world total and is almost exclusively destined for the Japanese market.'

Last year Sergi Tudela, project

catching fresh fish in the wild, transferring the live fish to huge floating cages and then towing these cages with up to 100 tonnes of live fish hundreds of miles back to our home port.

'The fish are fed twice a day on pilchards, and each cage requires three or four divers to clean out the dead fish, repair any holes, etcetera... The tuna boat operators have a supply of fat healthy tuna in the bay, so when the fish are needed in Japan a team is sent out to harvest, kill and prepare them to be air-freighted. These fish command huge prices – up to \$50 a kilogramme, and they have been

'Today's fishing nets are big enough to encircle the Millennium Dome. The lines are 100 miles long and have thousands of hooks that catch not just tuna, but sharks, seals, albatrosses and anything else unfortunate enough to be lured towards them'

coordinator of the WWF's Mediterranean Programme, wrote: 'All the usual ingredients are there in the case of tuna-fattening farms: privatisation of a common good (in this case, with the added risk of its probable destruction in the short- to medium-term); concentration of the benefits into a few hands; public aid provided to pillage a natural resource; dispossession of the traditional resource users; social and economic deconstruction of the traditional fishing sector; complete lack of a regulatory framework; connivance of the administration; ineffectiveness of international supra-statal organisations; and growing demand for the product from a powerful market'.

The practice of post-harvesting seems to have originated a world away from the Mediterranean, in Port Lincoln, South Australia, where the southern bluefin is caught and raised – again primarily for the Japanese market. Kiwi White, a pilot for the South Australian Tuna Association, says: 'The whole tuna industry now concentrates on

the saviour of the fishing industry in Port Lincoln. Many people are now employed, and the owners are building huge mansions, driving the latest Mercedes and spending large amounts around our town.'

Good for the fishermen, not so good for the fish. In April 1996 South Australia's tuna industry was crippled by a fierce storm that caused the deaths of thousands of captive fish that would have been worth more than \$55m. The fish, which were kept in floating pens and were unable to escape the storm, were suffocated as their gills became clogged in swirling clouds of silt, excreta and sediment. Between 65,000 and 75,000 tuna died.

The mass deaths were a serious setback, but evidently not a lasting one for the booming Port Lincoln tuna-farm industry, which has grown at a phenomenal rate since the first experimental farm was established in 1991. The \$100m fish-fattening industry now produces a whopping 60 per cent of the Australian tuna industry's 5,200-ton annual quota. ►



'DOLPHIN-FRIENDLY' TUNA EXPLAINED

The tuna we eat from cans is not from bluefins, but from the flesh of its smaller and (currently) abundant cousins yellowfin and skipjack. Because of their unexplained tendency to associate with schools of spotter and spinner dolphins, yellowfins and skipjacks are caught by 'setting on dolphins' — drawing purse seines around schools of dolphins.

This technique has resulted in large tuna catches, but also in the deaths of millions of dolphins. In California it was estimated that up to five million dolphins were killed in the 1960s. The (US) Marine Mammal Protection Act of 1972 made it illegal to harm any cetacean, but the US's tuna fishermen lobbied for an exemption, and continued to kill dolphins in staggering numbers — more than 300,000 in 1972. The fishermen carried on setting on dolphins until they were sued by a consortium of conservation groups and forced to suspend

their entire fishing operations. They were allowed to commence again only if they obeyed strict quotas imposed by the government, and agreed to kill no more than 20,000 dolphins per year. Later, US canners refused to accept tuna caught with dolphins, which led to the concept of 'dolphin-safe tuna'.

Unfortunately, even 'dolphin-safe' netting methods are far from perfect. In accordance with the US's dolphin-safe legislation, some netters shifted from netting around dolphin schools to netting around floating objects to which the fish are drawn. However, netting around objects can entail hundreds of times the bycatch of netting around dolphins. According to one analysis, each saved dolphin is traded off against approximately 16,000 discarded small tunas, 380 mahimahi, 190 wahoo, 20 sharks and rays, 1,200 triggerfish and other small fishes, one marlin and other animals.

Trapped in floating pens the fish are clogged in swirling clouds of silt. Between 65,000 and 75,000 tunas

Even though post-harvesting is classified as 'aquaculture', the fish are all wild-caught — just as if they had been harpooned or purse-seined. In true aquaculture, as is the case with Atlantic salmon, fish are raised from eggs, not simply moved from one place to another to be fattened. Nevertheless, the Australian and Mediterranean systems of tuna fattening demonstrate all the ills of legitimate

aquaculture. The carnivorous tuna are fed large quantities of small fishes, which themselves may be threatened by over-collecting. Thus this kind of 'farming' does not relieve commercial fishing pressure – it increases it. Waste from the pens is another problem, as is their location – close enough to shore and urban centres to disrupt and often pollute the littoral zone. And because tuna farming falls between the definition of a fishery and true aquaculture, it is completely unregulated on a world scale.

Farmed for the madding crowd

Now, tuna farming has arrived in Mexico. In an article in *The New York Times* last year RW Apple wrote about the 'new kind of mariculture' that was taking place off the Pacific coast of Baja California. Mexican fishermen net young bluefins and tow them to special enclosures where the fish are kept in circular pens and fed live sardines three times a day for six to eight months. When they reach a weight of about 190 pounds, the fish are killed and frozen – mostly to feed Japan's appetite for fatty tuna. 'Despite the lasting slump in the Japanese economy,' wrote Apple, 'the meat sells for as much as \$45 a pound.'

'The next step in the transaction,' says conservationist Carl Safina, 'is a one-way air-

suffocated as their gills became
, excrement and sediment.
died.

freight ticket to Tokyo.' The same is true of the Mediterranean bluefins, whose future is written in Japanese. The most beautiful fish in the world is being eaten out of existence as it has the misfortune of being one of the 'most desirable food fishes'. Prices rise as the fishes' numbers diminish. This sounds like a traditional 'supply-and-demand' equation, but the difference between fishing and

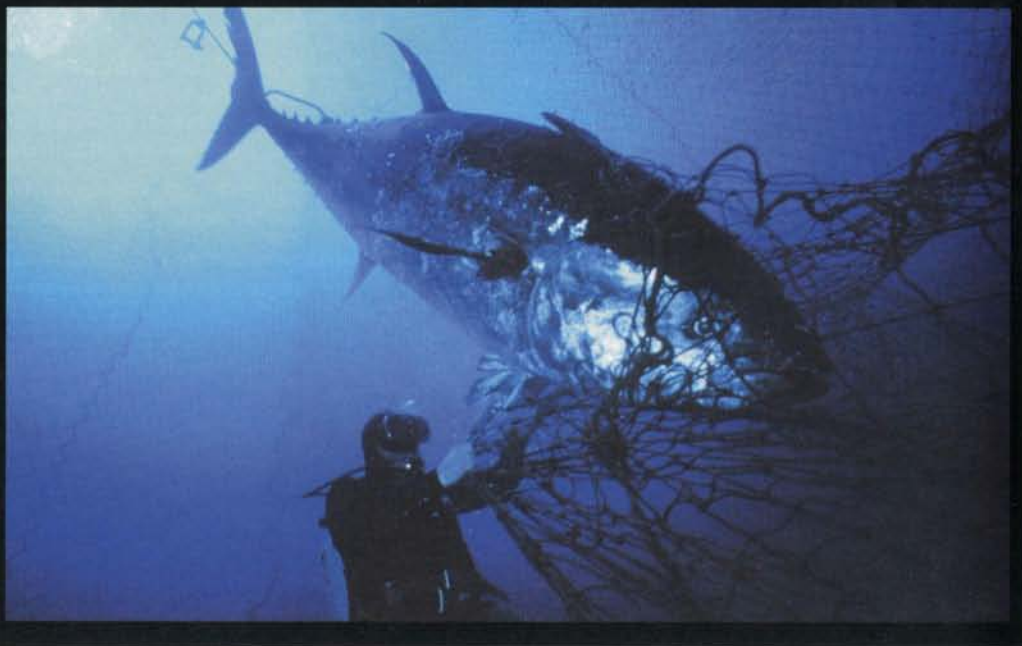
THE 'INTERNATIONAL CONSPIRACY TO CATCH ALL TUNA'

lccat (pronounced 'eye-cat' and standing for the International Convention for the Conservation of Atlantic Tunas) is responsible for the sustainable management of North Atlantic tuna fisheries. However, critics have long felt that it is failing in its purpose. The problem is the way lccat approaches the notion of fisheries management. In response to dwindling catches, lccat's 22 member countries divided the North Atlantic into eastern and western sectors, each with its own quota. The tuna of the western zone, which are caught by Europeans, are managed under a strict annual quota set by the EU. Those of the eastern Atlantic, targeted by US fishermen, have been managed under catch quotas since 1995. But the stocks of bluefin tuna have fallen dramatically in both areas: by 80 per cent in the eastern stock over the past 20 years, and by 50 per cent in the western population.

Recent findings have highlighted the inadequacies of this method. In 1996 Molly Lutcavage of the New England Aquarium and Paul Howey of Microwave Telemetry in Columbia, Maryland, began to develop microprocessor tags that could be attached to Atlantic bluefins in an attempt to

better understand their migration and biology. The migratory behaviour of the bluefin was found to be far more complex than anyone had imagined. Rather than segregating into eastern and western Atlantic populations, the tuna 'mixed', which further complicated the already thorny issue of who has the right to catch which tuna.

Some tuna were found to have traversed the entire ocean – some 1,670 nautical miles – in less than 90 days. Before the tagging data was analysed, it was thought that perhaps 2-4 per cent of the tuna might have crossed the border separating the two lccat sectors (the 45th meridian). lccat had established its quotas on the assumption that there were two distinct populations that did not mix. It now appears that while there are two distinct spawning areas – the Gulf of Mexico and the Mediterranean – the fish migrate across the Atlantic at will until they attain sexual maturity at eight to 10 years of age. They then migrate to their particular spawning grounds. Both eastern and western populations feed at western foraging spots, but they separate for breeding. Moreover, it wasn't 2-4 per cent of the bluefins that crossed the ocean, it was closer to 30 per cent.



manufacturing is that once the fish are gone you cannot make any more.

Soon the bluefin may have gone, and if or when that happens our voracious appetites will simply be redirected to the next fish down the chain, and so on until they have all gone. People in the West celebrate the spread of Japanese restaurants and eating habits as a triumph of globalisation, a phenomenon that is

bringing healthy, fleshy fish more and more into our diets. But will we feel so healthy when we have eaten every last tuna fish swimming the oceans. Or will we learn to stop before we are full, and the oceans empty? ■

Richard Ellis is a marine artist, writer and researcher at the American Museum of Natural History in New York. His latest book is *The Empty Ocean: plundering the world's marine life* (Island Press, 2003)

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for myself as a gift for the person(s) named below

Please send to: recipient myself

Disguise packaging? Yes No

Please send: Adult pack Under 14's pack

Adopter's Date of Birth

MY NAME (MR/MRS/MISS/MS)

ADDRESS

POSTCODE

TEL NO:

EMAIL:

RECIPIENT'S NAME (MR/MRS/MISS/MS)

ADDRESS

POSTCODE

TEL NO:

MESSAGE YOU WOULD LIKE TO INCLUDE (OPTIONAL)

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Reg Charity No: 1014705

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■ Sparta

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WDCS
Whale and Dolphin Conservation Society

“ Dear Roger,



Oh dear. I thought we were going to have a pleasant discussion, but I see that in your opening paragraph you've now hit upon the idea that I'm a 'confused' do-gooder. So let's discuss confusion, and do it with reference to the genetic technologies that, I think we agree, represent the nearest flashpoint for the larger question at hand.

You contend that people are making calls for 'blanket curbs' on genetic technology that would prevent us from 'banishing grim diseases'. This is untrue. As I made clear in my first letter, I (and most other people on my side of this debate) are comfortable with many applications of genetic technology: somatic gene therapy of the type used in trials to treat Parkinson's disease, for instance. (These procedures inject healthy genetic material into existing patients with existing diseases in an obvious if potentially powerful extension of existing therapies.)

What I and many others, especially in Europe, have opposed is germ-line genetic manipulation. This is the elimination, addition, or alteration of DNA in an embryo in an effort to produce a child with some improvement. You say that you think this is a good idea as long as it isn't used for enhancement. But, in fact, those who have studied the topic — including proponents like Watson or Silver — have been much more frank than you in admitting that there is no way to draw a line between repair and improvement. Watson's son has, you say, an emotional disorder of some sort. It can't, obviously, be fixed by germ-line genetic engineering (he's already been born). If a foetus's brain could be altered to avoid this particular disorder, the foetus would also be altered to provide an improved, perkier, child. Gregory Stock, who runs UCLA's Program on Medicine, Technology, and Society, has written that we will soon be able to guarantee 'optimistic' children. Given our new-found understanding of serotonin and dopamine controls, this is not so far-fetched.

This is the kind of 'quantum technological leap' I described in my first dispatch — a leap into a world where children are products, their attributes chosen from a catalogue. Perhaps if there was no other way to avoid genetic disease one could make a grim argument for it. But we already know how to test embryos for your '4,000 single-gene disorders', and pre-natal genetic diagnosis is already being used by parents to choose from among the embryos they can naturally create. Used very carefully, this technology offers hope for the outcomes you want without the outcomes you say you fear.

'Let's leave it to society to judge how to use technology wisely,' you declare. I couldn't agree more. The question as to whether we take quantum leaps into areas like advanced nanotechnology and advanced robotics should certainly be decided by societies — by the democratic process at work. That's exactly why many of us are trying to put these questions on the political agenda — and it's precisely why some researchers are trying to make

sure that doesn't happen. Watson, in particular, has been contemptuous of the idea that legislators should tackle these questions.

Your confusion is perhaps most poignant when you talk about the chance that if we forego, say, germ-line genetic engineering then we will 'lose our freedom to choose'. This is an argument from liberty, but no greater

No greater insult to liberty has yet been offered than the idea that parents should be able to select every last characteristic of the child they are creating

insult to liberty has yet been offered than the idea that parents should be able to select every last characteristic of the child they are creating. Every one of his cells will pump out those designer proteins for his entire life, determining everything from eye colour to temperament. This is very different from the fates that govern us now. Yes, we are products, in part, of our genes, but they haven't been chosen in that kind of clinical way. We are still people as people have been since the time of Ugg. But now we're about to cross a line into a very different world.

“ Dear Bill,



Germ-line and somatic therapies are the same technology applied to different cells (germ cells are eggs and sperm, and somatic the rest). In fact, if you don't control somatic therapy, you can end up with GM germ cells, too. Thus, if somatic gene therapy is an extension of existing procedures, as you claim, then germ-line therapy must be too.

Similarly, somatic therapy can also 'enhance' people (though that isn't something I'd want to do). So, why not ban somatic therapy too? Because it can do medicine a power of good, you say. But you could also do good with germ-line; you could, for example, make people Aids- and malaria-resistant.

As for your nightmare scenario of using genetic technology to eradicate human imperfection, let's say you have a one-in-four chance of getting a working gene into a safe part of the genome (a much higher success rate than currently possible). Imagine you understand the biochemistry

of a single personality trait (which we don't), and that you want to 'enhance' it by tinkering with 10 genes (a conservative estimate that assumes, wrongly, that environment counts for nothing). Then you would need about a million GM embryos to succeed. To target 'every last characteristic' would take a mind-boggling number. For a very, very long time, it will remain much easier to marry a smart person and give your kids a good education.

To abandon technologies because of your wild-eyed concerns makes about as much sense as banning the first electronic calculator because of fears that super-intelligent robots would enslave the human race. Face it, Bill, you would have begged Stone-Age man to ban fire before we moved into a 'very different world' where houses could be razed, crops torched and people burnt.

“ Dear Roger,



Oddly enough, I've just come in from a campfire, where we cooked our dinner and gazed out at Mars. I love fire (I've heated my home with wood for many years), and I'm sure I would have welcomed the changes it first brought.

You see, I can discriminate between technologies. You seem unable to, and have a kind of hysterical fear that you might miss out on something if you don't jump over every barrier.

I don't think I've said a wild-eyed thing in this whole exchange. But you never bothered to answer my query as to why we needed these quantum leaps, considering the dangers — physical and moral — that they present.

And your understanding of human genetics doesn't give me much confidence in your ability to discriminate. The reason that somatic and germ-line therapies are different is because one treats an existing individual, while the other makes changes in an embryo that will pass on to every single descendant of that embryo thereafter. It's precisely that increased power that should worry us. And that's why — despite your protestations — Jim Watson et al are so eager to overturn existing laws and do germ-line work.

In the larger sense, I think you've failed to distinguish between normal advances in technology and quantum leaps into very different ideas of what constitutes human life. If it turns out that the human brain is a useful evolutionary development, it will be precisely because it (and the human heart) enables most of us to make those distinctions.

Roger Highfield is the Science Editor of the *Daily Telegraph*. Bill McKibben is the author of *Enough — Genetic Engineering and the End of Human Nature*

Malcolm Tait



100 years ago this month...

In October 1903 the US novelist Nathanael West was born. West believed that mankind's insistence on creating synthetic beauty will eventually result in the destruction of both humanity and all the natural beauty that already surrounds us. In the Hollywood-set *The Day of the Locust* he wrote: 'He could see a 10-acre field of cockleburs. In the centre was a gigantic pile of sets, flats and props. While he watched, a 10-ton truck added another load to it. This was the final dumping ground.'

...Cockleburs produce small seed-bearing fruit covered with stiff, hooked spines. By attaching themselves to fur or clothing, they are carried all over the world. In 1948 amateur Swiss naturalist George de Mestral returned from a walk covered in burrs. Inspired by their design, he invented Velcro. The word 'Velcro' is short for 'velour crochet' or 'crocheted velvet'...

...By October stags have shed the velvet from their antlers and entered the rutting season. Velvet is a blood-rich skin that encourages summer antler growth. Once the antler has grown, the velvet rubs away. The following spring, the dead antler bones drop off, velvet reforms over the stub and the process begins anew. In the peat-filled Scottish Highlands stags gain extra nutrients such as calcium from chewing their discarded antlers...

...Peat is still used as a fuel source in parts of the Isle of Lewis, most of the island being covered with it. Even the name Lewis, which comes from the Gaelic 'Leodhas', means 'marshy'. The rock that lies below the peat is Lewisian Gneiss. At up to 2,900 million years old, it is over half the age of earth itself...

...Last year nearly a million salmon in farms off the Isle of Lewis were killed by blankets of tiny jellyfish, which stung them and clogged up their gills. The jellyfish – known as Solmaris – are indigenous to the Pacific Ocean, and probably reached the Atlantic attached to vessels passing through the Panama Canal...

...We have jellyfish to thank for *Vile Bodies*, *A Handful of Dust* and *Brideshead Revisited*. In 1925, before writing these novels, Evelyn Waugh tried to commit suicide. He swam out to sea and straight into a shoal of jellyfish, which stung him so much he fled back to dry land. He was in his early 20s, having been born in October 1903 – 100 years ago this month.

OCTOBER

Sunday

Monday

Tuesday

THIS MONTH IN HISTORY

October is Nobel Prize month. Here's a timely reminder of some of the less deserving recipients of the award

1918 German chemist Fritz Haber wins the prize in chemistry for extracting ammonia from nitrogen. During WWI Haber was responsible for the invention of chemical warfare.

1948 Paul Hermann Muller wins the medicine prize for his synthesis of DDT.

1962 James Watson, Francis Crick and Maurice Wilkins win the prize for medicine for determining the structure of DNA – the discovery that led to GM.

1970 The peace prize goes to father Norman Borlaug for his development of high-yield wheat varieties. The result? In India alone, 50 per cent of Punjabi farm land was reduced to dust.

1973 Henry Kissinger wins the peace prize. He is later accused of complicity in the secret bombings of Cambodia during the Vietnam War and in the removal and murder of Chilean president Salvador Allende.

1976 Milton Friedman wins the economics prize. No one else has done more to push free-market globalisation upon the world.

1994 The peace prize goes to Yasser Arafat, Yitzhak Rabin and Shimon Peres. A little premature perhaps?

1996 The chemistry prize goes to Robert F Curl, Richard E Smalley and Harold W Kroto for discovering hollow molecules of carbon called 'fullerenes' or 'buckyballs' – the basis of nanotechnology. Quite what the consequences of this discovery will be remain to be seen.

13

Tractor and Trolley Parade, London

Following a summer of local anti-GM activities around the country, the Tractor and Trolley Parade promises to be a fun, peaceful and good-humoured event. Consumers and farmers will demonstrate their strong resistance to GM crops and food.

Led by tractors and accompanied by samba and ceilidh bands, hundreds of people will push decorated trolleys full of GM-free produce along a route that passes the Department for Environment, Food and Rural Affairs, 10 Downing Street and the National Farmers' Union.

Freephone 0800 800 1111
www.foe.co.uk



21

Apple Day, Nationwide

An annual celebration of the apple, orchards and local distinctiveness, initiated by environmental charity Common Ground in 1990. It has since been celebrated each year by people organising hundreds of local events.

www.commonground.org.uk

1-5

Trident Ploughshares Devonport Camp, Devon

Six days of disarmament activity focused on the refitting of the UK Trident nuclear weapons submarine *HMS Vanguard*.
Claire, 08454 588363
Matt, 01823 601346
tp2000@gn.apc.org
www.tridentploughshares.org



27

Stop the Corporate Invasion of Iraq

1 Whitehall Place, London SW1A, from 08:30 onwards. Picket and protest outside the conference 'Reconstructing Iraq' to demand that Iraq's people be able to determine their own economic future free from foreign interference.

Organised by Voices UK
www.voicesuk.org

28

Free Speech, Human Rights and Western Values? London

Seminar at the Centre for the Study of Human Rights at the London School of Economics. Held in conjunction with *Index on Censorship*. Speakers include Andrew Puddephatt and Ursula Owen.

020 7955 6428
j.m.whyte@lse.ac.uk

23

Stockholm Protocol ratified

The Stockholm Protocol to control persistent organic pollutants (POPs) enters into force. POPs are thought to cause birth defects and reduce male sperm counts. They also have a detrimental effect on physical and intellectual development, and damage the immune system. Foetuses and infants are particularly at risk.



- At its best
- In season

- artichokes (Jerusalem)
- artichokes (globe)
- asparagus
- aubergines
- beetroot
- borlotti beans
- broad beans
- broccoli (purple sprouting)
- broccoli (calabrese)
- brussels sprouts
- brussels tops
- cabbages (various green varieties)
- cabbages (white)
- cabbages (red)
- cardoons
- carrots
- cauliflower
- celeriac
- celery
- chard
- chicory
- courgettes
- cucumber
- endive
- fennel
- french beans (whole pod)
- garlic
- greens (spring & winter)
- kale (& borecole)
- kohlrabi
- lamb's lettuce
- leeks
- lettuce
- onions
- pak choi
- parsnips
- peas, including sugar snaps
- peppers and chillies
- potatoes
- pumpkins (& squashes)
- purslane
- radishes
- rocket
- runner beans
- salsify (& scorzonera)
- samphire
- sea kale
- sorrel
- spinach
- swede
- sweetcorn
- tomatoes
- turnips
- watercress

Wednesday



Thursday



Friday

4 World Animal Day



Animal welfare groups, sanctuaries and individuals throughout the UK will hold special events to heighten public awareness of animal issues and to encourage people to think about how we as humans relate to animals.
www.worldanimalday.org.uk

Saturday

5-6 RAF Lakenheath Demonstration and Trespass, Suffolk

Demonstrate from 12-4pm on the Sunday, trespass from 6am to midnight on the Monday. RAF Lakenheath is the primary US tactical airbase in Europe. It has about 30 nuclear weapons deployed there under complete US control.
zinazelter@yahoo.co.uk

11 Stop Primate Experiments at Cambridge

March and rally to oppose a proposed primate lab.
Stop Primate Experiments at Cambridge, 07957 588253

11 Don't Take The Peace Out Of Space Menwith Hill, North Yorkshire

Space-themed demo organised by the Campaign for the Accountability of American bases and Yorkshire CND. Speakers, music, food, a trip around the base and more. Come dressed as a 'celestial body' (comet, galaxy, alien, etc).
*01274 730795/ 01943 466405
info@yorkshirecnd.org.uk www.takepeace.org*



16 Worldwide Day of Action Against McDonald's

World-wide protest against McDonald's and its treatment of the environment, animals and their employees.
www.mcspotlight.org



19-26 One World Week Worldwide

25th anniversary of the annual campaign promoting world awareness, celebrating cultural diversity and calling for action against injustice and poverty. Events are held regionally in the UK and around the world.
*0118 939 4933
www.oneworldweek.org*



Dead porpoise – a victim of POPs

25 Anarchist Bookfair London

ULU, Malet Street, London WC1. Stalls, meetings, workshops, food, bar, videos, creche and evening event.
*mail@anarchistbookfair.org
www.anarchistbookfair.org*



30 The Punky Night, Hinton St George, Somerset

The last Thursday of October is known as 'Punky Night' in Hinton St George, Somerset. Children parade around the town with lanterns carved out of a variety of beet called mangle wurzels. Local legend tells of a fair that once flourished in nearby Chiselborough. Hinton men always went to this fair and inevitably failed to return home at the end of the day. The women had to go out looking for them, carrying home-made lanterns known locally as 'punkies'. This annual round-up of drunken husbands became jocularly known as 'Punky Night'.

An alternative explanation is that Somerset people use the term 'spunky' to refer to will-o'-the-wisps. Will-o'-the-wisps are balls of light that rise from bogs and marshes at night. The physical explanation for these lights is that they are caused by 'marsh gas', or methane. Science aside, in Somerset there is a belief that will-o'-the-wisps are 'spunkies' – the souls of unchristened children. The lanterns thus symbolise dead babies. And All Souls' Night falls, of course, at the end of October.



BOOK OF THE MONTH

Reclaim the State: experiments in popular democracy

by Hilary Wainwright

Verso 2003, £15

If you thought that practical alternatives to globalisation only happened in exotic places like Chiapas, think again. In *Reclaim the State*, Hilary Wainwright goes searching for some of the most inspiring examples of communities building their own alternatives, and finds some fascinating examples of her own.

Refreshingly, she starts off with the admission that those who seek alternatives to global capitalism do not yet have all the answers. 'When old institutions fail,' she writes, 'people invent... All of us... are, in that sense, like practical scientists engaged in this process of invention.'

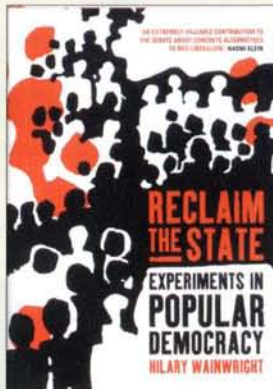
Her search for the results of such experiments takes her to faraway places like the Brazilian city of Porto Alegre – the home of the much-lauded 'participatory budget'. But the best bits of the book uncover arguably more relevant but much less-known community actions in Britain: Manchester residents rebuilding their shattered communities from the ground up; squatters in Luton joining forces with local vicars to create a new local economy; and, best of all, council workers in Newcastle fighting off British Telecom's attempts to privatise them. Community action, like globalisation itself, is not just something that happens to other people. Enlightening stuff.

REVIEWED BY PAUL KINGSNORTH

Paul Kingsnorth is the author of *One No, Many Yeses*: a journey to the heart of the global resistance movement (Free Press, £10) www.paulkingsnorth.net

Reclaim the State is available to Ecologist readers at a 20% discount (p&p included).

Please call 01235 465500 or e-mail direct.orders@marston.co.uk quoting ref ECOVERSO



Authenticity, brands, fakes, spin and the lust for real life

by David Boyle

HARPER COLLINS 2003, £12.99

'Getting real' is the next big thing in Western living, David Boyle says. 'It's not that we don't want all the advantages of progress; – we do. We just want a future that manages to be local and real too.'

In this highly thought-provoking book, Boyle tracks the struggle for reality via computer games and communities, Elizabeth David and Peter Pan, organic chocolate and hip-hop. While he accepts that globalisation may be here to stay, Boyle shows that there is an equal, opposite and growing trend for what is real and local.

Through his optimistic and witty writing, Boyle has put the notion of authenticity firmly on the map – showing the reader an unexpected force that could change our lives.

REVIEWED BY NATASHA LEACH



LATEST RELEASES

Biotech Time-bomb: how genetic engineering could irreversibly change our world

by Scott Eastham

RSVP PUBLISHING 2003, NZ\$28

More than just another technical anti-GM book to add to the pile, this is a devastating critique of the 'modern Western scientific mentality' that underpins faith in such technologies.

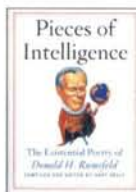


Pieces of Intelligence: the existential poetry of Donald H Rumsfeld

edited by Hart Seely

SIMON AND SCHUSTER 2003, £8.99

Culled from speeches, interviews and press briefings, this is a wonderful reminder that George W Bush isn't the only member of the US government to have a certain way with words.



Are Prisons Obsolete?

By Angela Y Davis

SEVEN STORIES PRESS 2003, £6.99

More than 2 million Americans are currently behind bars. Davis book argues convincingly that the US prison system is out of control.

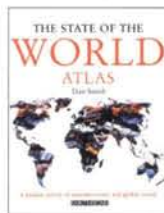


The State of the World Atlas

by Dan Smith

EARTHSCAN 2003, £11.99

Military spending, refugees, trans-national corporations, climate change – these maps and graphs show the world as it really is. An essential snapshot of the trends shaping today's world.



Off the Map: an expedition deep into empire and the global economy

by Chellis Glendinning

JOHN CARPENTER 2003, £11.99

A unique voyage into the heart of globalisation, charting its impact on the people of New Mexico and exposing how it is no different to the imperialism of earlier times.

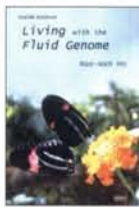


Living with the Fluid Genome

by Mae-Wan Ho

INSTITUTE OF SCIENCE IN SOCIETY 2003, £7.99

More important than everything else contained within this excellent little book is the exposure of the flaws at the heart of GM, which mean that the technology can never work as its promoters claim.



Vital Signs 2003-2004

WorldWatch institute

EARTHSCAN 2003, £14.95

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The Land We Share: private property and the common good

by Eric T. Freyfogle

ISLAND PRESS 2003, \$25.00

A unique and intelligent analysis of our understanding of private property and how it has evolved through the ages.



Weapons of Mass Deception: the uses of propaganda Bush's war on Iraq

by Sheldon Rampton and John Stauber

PENGUIN 2003, £6.99

If you think we've had it sexed-up in the UK, you should read this account of the PR campaign used to sell the war in the US.



Coal: a human history

by Barbara Freese

PERSEUS PUBLISHING 2003, £15.50

In 1996, 5 million Chinese were mining coal. Five years earlier 10,000 Chinese coal miners had died in mining accidents. Of such stuff is Freese's fascinating, if disturbing, book made. Rich in anecdotal detail, the book charts the history of our use of coal up to the present day. Coal has always been tied to prestige and progress. Thus, when Britain was in its industrial pomp in 1820 it produced four fifths of the world's entire supply of coal. Yet by the end of the century it had, as with global affairs generally, been overtaken by the US. But tied to this progress have been the devastating health and environmental consequences of our reliance on so polluting a substance. Freese comments: 'Coal has always been both a creative and a destructive force. It is the tension between the two that makes the story of coal so compelling.'

REVIEWED BY JEREMY SMITH



So Shall We Reap

by Colin Tudge

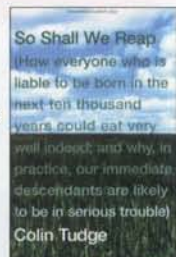
PENGUIN 2003, £20.00

Tudge exposes the flaws inherent in our modern agricultural system. That system's drive for maximum production at minimum cost has destroyed rural communities across the globe, caused obesity to soar and left the developing world starving at the same time as it exports food to stock the shelves of the rich world's supermarkets. Tudge advocates a return to a more traditional form of agriculture, and a rejection of the pesticide-ridden intensive monoculture beloved of corporations the world over.

By following the principles of enlightened agriculture – an approach grounded in sound biology, modern nutritional theory and fundamental human values – Tudge insists that it is possible not only to heal our health and environment, but also to feed the whole world to the highest possible standards for tens of thousands of years to come.

An important and timely book.

REVIEWED BY DOUGLAS BEBB



Five Holocausts

by Derek J Wilson

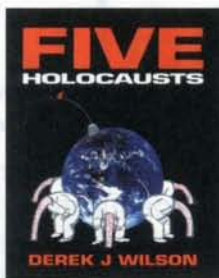
STEELE ROBERTS 2003, NZ\$59.95

The five holocausts of the title are militarism, human oppression, economic destitution, the population explosion and environmental destruction.

Wilson rightly sees this quintet as the five issues that humanity must tackle, however daunting that may seem, if we are to stand a chance of surviving for much longer on this planet. What links all five, he argues, is a short-sightedness in the human psyche that stops us from recognising the long-term damaging effects of seemingly desirable goals.

Wilson makes an impassioned case for priority to be given to these issues by government, institutions and society in general. He draws heavily, as he must, on well-known figures in the peace, environmental and social movements. And he repeatedly reminds us of the special interests that are trying to discredit these popular movements working for economic and social change.

REVIEWED BY COLIN WHEELER



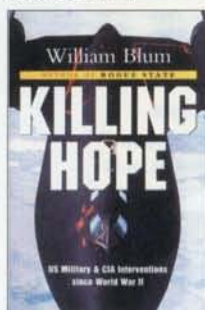
Killing Hope: US military and CIA interventions since WWII

ZED BOOKS 2003, £12.99

Just in case anyone hadn't quite worked it out yet, in this updated edition of his classic work, Blum lays to rest the notion of the US as a peace-loving force for good.

Called 'far and away the best book on the topic' by Noam Chomsky, this edition of *Killing Hope* has a new final chapter – 'The American Empire, 1992 to the Present', which, along with the rest of the book, exposes the constant and often clandestine warmongering that has marked US foreign policy for the last 50-plus years.

REVIEWED BY PHIL MORGAN



MY FIVE MOST INFLUENTIAL BOOKS

Anita Roddick

'My sharpest focus has been on matters of globalisation, because the "free-trade-at-all-costs" agenda is behind pretty much all of the issues I've spent the last 25 years campaigning on. In November 1999, I flew to Seattle to speak out against the World Trade Organisation (WTO) and witnessed at first hand the "Battle of Seattle". I came away choking from the tear gas and with a deep sense of shame at the way multinationals and politicians can behave. It reinforced my resolve to do whatever I can to campaign for human rights and against a trade system that focuses only on profits – no matter what the human cost.'



1 Which book first made you realise that 'something was wrong'?

The Grapes of Wrath by John Steinbeck

'It was my introduction to the politics of poverty, understanding communities that are rooted to the land and the issues of social injustice.'

2 Which one book would you give to every politician?

Small is Beautiful by EF Schumacher

'Schumacher argues so brilliantly about the pursuit of the current profit and progress. This approach doesn't promote anything other than gross inefficiency, environmental pollution and inhumane working conditions. He shows how narrow-minded and obsessed with economic values our politicians are.'

3 ...to every CEO?

When Corporations Rule The World by David Korten

This book is a devastating exposé of the tyranny of the bottom line, but it also shows millions of alternatives for positive futures.

4 ...to every child?

The Lorax by Dr Seuss

It's a great anti-globalisation, anti-corporate-greed book (published in 1971) that looks like it's for kids but has a strong message for everyone. It was banned in many school districts where logging interests had a strong presence.

5 It's 2050. The ice caps have melted; sea levels are rising. You're only allowed one book on the Ark. What is it?

The Oxford Companion to English Literature – edited by Margaret Drabble

If I can only have one book, then it's this. It is the best reference book giving the reader the plots and summaries of thousands of books, but it also talks about artists and composers, embraces science fiction and even comic strips.

Anita Roddick is the founder of the Body Shop retail empire, and author of *A Revolution in Kindness*, *Brave Hearts*, *Rebel Spirits* and *Take it Personally: how to make conscious choices to save the world*.

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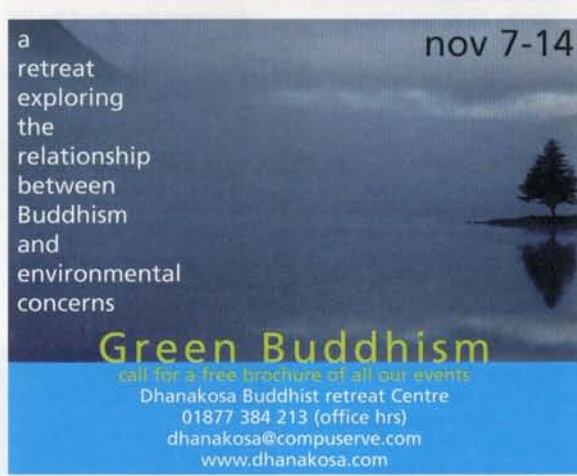
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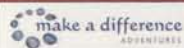


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Hours per day detainees in Guantanamo Bay are left in cells without exercise **24**

Percentage rise in Bolivian coca production 2001-02, in spite of eradication programmes 23

Millions of steel cans that will be dumped on the British Isles this year

22

Years it takes a cigarette butt to decompose due to the plastic in the filter 21



Factor by which British arms sales to Indonesia increased in 2002 **20**

Percentage of Americans living below the poverty line 19

Percentage increase in global CO₂ levels from 1960 to 2002 **18**

Millions of child refugees in the world 17

16

Number of pesticide sprays used on a typical cox apple



Factor by which deforestation in Brazil has increased over the last 30 years 15

Number of years in which power company Tokyo Electric systematically falsified safety inspections in Japan **14**

Percentage of US citizens not expecting to reach the age of 60 13

Number of meteors that enter the earth's atmosphere each year that are larger than a car

12



Tonnes of CFCs leaked by non-domestic coolers, freezers and fridges in the UK each day 11

Percentage of amphibian species in immediate danger of extinction

10

The number of nations with the next largest military budgets whose combined military spending equals the US's 9



Annual expenditure in billions of dollars on cosmetics in the US **8**

Percentage of deaths and diseases caused by poor water, sanitation and hygiene 7

Average number of days an oiled sea bird survives in the wild after cleaning and release **6**

Number of the top 10 advertisers that are car companies 5

Number of years of tobacco advertising spending needed to finance control of global population growth

4



Factor by which air passenger numbers are expected to increase by 2030 (to 500 million) 3

Percentage of all mammal populations that have become extinct worldwide

2

Number of smallpox cases that the World Health Organisation considers would constitute a global emergency 1

Average growth rate of a dozen random African economies following a decade of World Bank/ IMF 'aid' programmes **0**



SOURCE: STATE OF THE WORLD 2003, THE WORLDWATCH INSTITUTE



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