

Nature & Society

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Editorial: Our Worst Interests

Years ago the American historian Barbara Tuchman wrote *The March of Folly*, a book about various famous cases in which governments or other powerful people persisted in pursuing a course of action that was in their own worst interests. At the time the Vietnam War was the modern instance of this ancient folly. Now we have the Iraq War, the War on Terror and the head-in-the-sand attitude towards climate change and other environmental-disasters-in-the-making.

One criterion Tuchman insisted on for qualification in *The March of Folly* was that the behaviour should have been seen as folly by some others at the time, and the folly pointed out to those engaged in it. If it is only in hindsight that the actions can be seen as counterproductive, then they do not qualify as folly.

When, for instance, one community discovered how to irrigate their fields and increase their productivity this was eminently sensible and very clever. When many civilisations in the Middle East did the same thing, and in turn caused salinisation, ruining their land and creating a desert, this was not wise. When modern civilisations do it, it is downright folly. We have been warned.

There have only ever been two countries that have got away with intensive land use for a prolonged period. China and Egypt managed it because they were endowed with quite exceptional resources. The Chinese had a great depth of fertile loess soils; Egypt had the annual flood of the Nile, which brought new, fertile soil from far places. Both countries have succumbed to modern folly. Egypt dammed the Nile, so its fields no longer get their annual increment. Chinese cities have started expanding across more fertile places and highways also bury good soil under bitumen.

Only a tenth of China is cultivable, the rest deserts and photogenic mountains. This is half the land per head available to Indians, one-tenth the share of Americans.

Murray Sayle
Griffith Review 12, May 2006

Over-extraction of ground water is threatening their future.

One definition of stupidity is 'doing the same thing and expecting different results'. Prohibition in America showed that it was stupid to ban alcohol: the law was widely flouted, more alcohol was consumed than before and there was great growth in criminal activity and violence. Looking at that experience showed that something similar was likely to happen if other drugs were banned. They were, and the experience repeated itself. Despite the death penalty in some countries the drug scene is flourishing along with the criminals who control it. Yet the lead taken by some jurisdictions to implement harm minimisation programs is not followed. We must be tough on drugs however counter-

productive that is.

As well as continuing with tried and truly failed policies there is a strong tendency in many countries to copy policies that are failing, or have already failed, in other countries. Why are we so doomed to continue making the same mistakes? Keith Suter asked this question in the *Canberra Times* last January, and suggested that maybe a course in stupidology would help to solve the problem. He suggested

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that instead of cases of best practice, we should study the worst cases to find out what went wrong. It's a good idea, but it has been tried. After all Jared Diamond wrote *Collapse*, and other authors have written similar books, but readers read them and do not think they are relevant to our current situation.

Ronald Wright, in *A Short History of Progress*, his Massey Lectures published a couple of years ago, pointed out that because we keep thinking it cannot happen to us, that we can save ourselves by technology, we are actually doomed by hope. "Hope drives us to invent new fixes for old messes, which in turn create ever more dangerous messes. Hope elects the politician with the biggest empty promise; and as any stockbroker or lottery seller knows, most of us will take a slim hope over prudent and predictable frugality. Hope, like greed, fuels the engine of capitalism."

There are many new and impressive energy conserving or electricity generating ideas around, but they will not save us unless we use them and, at the same time, cut down on total demand. If we keep on demanding more of everything, more people, more water, more goods, then we are doomed. Wright says that "the reform needed is not anti-capitalist, anti-American, or even deep environmentalist; it is simply the transition from short-term to long-term thinking. From recklessness and excess to moderation and the precautionary principle."

How to achieve this change is the challenge. Trying to convince people is very difficult; it is better if they make the decision themselves. This is the rationale behind the Futures Forums program that NSF is running. It lies behind the proposal by Bob Douglas for the establishment of Life Centres (page 4). When people discuss the current state of our society, and of the natural world and our place in it, and seek knowledge about all of this, they should be able to see that we

cannot keep going the way we are. If enough people are convinced of the need for changes in their own behaviour and of the whole of society, then they can influence government and business policies. Until this knowledge permeates society right up to government, we cannot hope for meaningful change.

Jenny Wanless

German researchers find new insight on social punishment, human cooperation

In an experiment at the University of Erfurt in Germany, researchers have found that groups in which individual members have the option to punish freeloaders were more popular than groups without this option.

Though two thirds of the study participants initially chose to join a group in which members could not punish others, many abandoned this non-punishing group after seeing the greater rewards that come with cooperation that is maintained when individuals punish freeloaders.

Science author Bernd Irlenbusch, said. "The important question is how can we encourage people to impose these social sanctions ... to provide for the public good which could affect the whole world community"—on issues like the environment, for example."

Understanding the circumstances under which people cooperate is of great interest because addressing some of the world's most pressing issues, such as

global climate change, may require people to act in the best interest of the group.

Co-author Rockenbach noted that this new work supports the idea that cultural selection—the notion that culture can evolve in ways similar to Darwin's natural selection—plays a role in the establishment and maintenance of cooperation.

From *Science* 7 April 2006

Joseph Tainter, analysing the collapse of civilisations, described three models of collapse. These are the Runaway Train, the Dinosaur and the House of Cards. These usually act together, so they are really aspects of the same collapse.

The invention of agriculture, enabling large population growth until it hits the bounds of the food supply, is the Runaway Train. It encourages the growth of hierarchical systems, with an upward concentration of wealth, ensuring there is never enough to go round. (It is horrifying that no matter how wealthy people are today, they still claim to be unable to buy everything they need!)

The rulers' failure to tackle these problems is the Dinosaur aspect. The swift, irreparable and unforeseen (by the rulers, anyway) collapse represents the House of Cards.

*Ronald Wright
A Short History of Progress*

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Tel: +61 (2) 6288 0760

Fax: +61 (2) 6287 4489

E-mail: office@natsoc.org.au

Website: www.natsoc.org.au

Where we are:

Our rooms are in the South West Wing of Weston Creek Primary School, Minns Place, Weston, ACT.

By car: from Civic, follow the signs to Weston from the Tuggeranong Parkway and continue to Weston by veering left from the traffic lights at the Cotter Road turnoff. This takes you along Streeton Drive for one kilometre, then turn left into Hilder Street (there is a small signpost pointing along Hilder Street). Drive around behind the school into Minns Place and then into the car park. Our rooms are down the slope to the left of the school building – about 40m from where you'll park your car. Follow the sign to 'Sustainability Groups'.

There is space for three or four cars for disabled access close to the entry. There are ramps over the kerb from this small parking space and entry to our building is without steps.

By bus: The 126 bus route from Central Canberra and walk 200m.

By bicycle: the office is adjacent to the western trunk cycle path between Civic and Tuggeranong.

NSF membership

All NSF members should have received last month a letter inviting them to renew their membership for 2006-07. The Life Centres and Social Change projects (see next page) are two significant initiatives that are well under way and which depend on membership fees for their success. We have also introduced a new option to enable small donations to NSF to be deducted monthly from credit cards.

Forthcoming NSF meetings

The June meeting will both be held at the Fellows Lane Cottage, Emeritus Faculty, Building 3T, ANU campus, beginning 7:30pm

June meeting: Wednesday 21 June 2006

Our speaker in June will be Dr Deborah Bird Rose from the Centre for Resource and Environmental Studies at the Australian National University. She will talk to us about deserts in the Australian context in this, the International Year of the Desert and Desertification.

To understand a desert, find the water. To understand water, go to a desert. Nowhere is water's trickster character more expressive than in deserts where it hides itself remorselessly, and then turns itself into floods and calls up the most vividly abundant life.

Where there is life there is mystery, and water flows through it all: from creation stories to contemporary ceremonies, and within the coming forth and the effervescent lives of living things who flourish in deserts. This talk is an invitation to imaginatively visit some deserts and some water, and to encounter the work of singing up life in the deserts of Australia.

Dr Rose draws on many years of work on Aboriginal claims to land in the desert. She also reminds us of processes of desertification that diminish, rather than enhance, life.

For information about future meetings, check our website www.natsoc.org.au and click on "What's On".



What's been happening

Life Centres Roundtable

A stimulating and groundbreaking event will be held in the Nature and Society Forum rooms in Canberra on Saturday 17 June — a roundtable discussion about developing an Australian Life Centre Movement.

The vision for life centres has been outlined in books by Stephen Boyden¹ and Bob Douglas. In essence the centres will be community-focused facilities where people of all generations will meet to learn, teach and discuss how we can achieve “healthy people on a healthy planet”. The life centres will also be bases for practical action and support to reach that goal.

To explore the feasibility and practicability of developing a national life centre movement, we have invited a diverse group of around 40 Canberrans who we believe could help to develop the life centre idea further and advise on establishing prototype centres in several suburbs of Canberra.

There will be no formal presentations at the roundtable. The whole day will be spent in dialogue about the concept and its feasibility.

All participants are making available for circulation to other participants prior to the roundtable, a one-page set of dot-points which:

- summarise their reactions to the two discussion papers, and
- include a brief biographical note.

So that participants can get to know each other informally, following their introductions through the dot-points, the roundtable will be preceded the previous evening by an informal buffet dinner to be held at the Nature and Society Forum headquarters.

More information on page 8 and on the NSF website. A report of the roundtable and action flowing from it will appear in the next edition of *Nature and Society*.

1. See page 8

Social Change

This innovative NSF project goes to the heart of NSF's vision of “healthy people on a healthy planet”. The project aims to empower Australians by providing the essential information in plain language about the main ecological and health problems facing Australia.

In this it is unique as other sources of information are narrowly focused on events and so often miss the many connections between them and ignore the biohistorical context. The project will convey the complexity without making the information complicated. In this project NSF “sticks its neck out” and outlines the essential characteristics of a biosensitive society of the future. This is where

the title “Social Change” comes from as we look towards the Australia of the future and the changes we need to make to achieve biosensitivity and sustainability. Within a month we'll pilot the first of the core Social Change documents on the NSF website. The project will expand to include print documents, regular updating, opportunities for feedback and measures to stimulate thought, understanding and informed action in society to

achieve biosensitivity.

There will also be exchange of information on effective practical steps that are at present being taken consistent with the shift to biosensitivity (locally and nationally).

The perfection of hunting spelled the end of hunting as a way of life... The hunters at the end of the Old Stone Age ... broke rule number one for any prudent parasite: Don't kill off your host. As they drove species after species to extinction, they walked into the first progress trap.

Ronald Wright
A Short History of Progress (p39-40)

Science is a dangerous gift unless it can be brought into contact with the wisdom that resides in the sensual, intuitive and ethical aspects of our natures. ... [I]t is only when these other ways of knowing complement our rational approach to the world that we can truly experience the living intelligence of nature.

Stephan Harding
Animate Earth: Science, Intuition and Gaia (p.20) (2006)

Making housing more self reliant

On 17 May, NSF members and guests enjoyed a stimulating presentation by Derek Wrigley who explained for us recent developments in domestic solar planning and solar energy for a climate like Canberra's, with very hot summers and frosty winters. Derek related house design and urban design to climate change and peak oil.

Here Derek discusses affordable, comfortable and energy-efficient housing options.

There are many dire predictions about global climate changes – and there is now more than sufficient evidence to show that the continuing use of fossil fuels (and their emission of greenhouse gases) is a major cause of some of these changes.

Australians *per capita* are the greatest generators of greenhouse gases in the world. This is largely because about 85 per cent of our electricity is generated from coal. The designs of our houses have also been based and are *continuing* to be based on the assumption that fossil fuels (electricity and natural gas) will always provide for our comfort and convenience.

This is a very short sighted assumption, particularly as we all seem to have lost sight of the fact that *natural energies* can contribute a great deal to our comfort more quietly and in a significantly cheaper way than energy consumptive technology.

Existing houses usually represent about 95 per cent of the domestic building stock at any one time and almost all of them are ill-equipped for a changing climate. If we are to reduce our greenhouse gas emissions then retrofitting (modifying) existing houses is where we can make significant reductions.

Something can be done to every existing house by way of conservation and the use of

new technology—it just needs the realisation that it is possible to retrofit economically if we adjust our set of values, but it is unlikely to happen on a big enough scale unless the various levels of government provide the right incentives. Almost all of us have access to abundant natural energy all around us – sun, wind, rain, gardens – but the techniques of using them effectively are insufficiently recognised by most home owners and builders.

Houses and apartments *being built today* show few signs that modern building science or proven technologies are utilised in their design. They will be almost unliveable in the Canberra winter when natural gas becomes too expensive and starts to run out.

It has been often said that, if the human species fails to make a go of it here on Earth, some other species will take over the running. In the sense of developing intelligence this is not correct. We have, or soon will have, exhausted the necessary physical prerequisites so far as this planet is concerned. With coal gone, oil gone, high-grade metallic ore gone, no species however competent can make the long climb from primitive conditions to high-level technology. This is a one-shot affair. If we fail, this planetary system fails so far as intelligence is concerned. The same will be true of other planetary systems. On each of them there will be one chance, and one chance only.

*Fred Hoyle
Of Men and Galaxies, 1964*

Over the last fifty years a lot of Australian research has shown that free solar heat and psychologically beneficial sunshine can warm our houses in winter. Australia has even developed a way of reflecting the radiance of the sun into *southern* rooms - once thought to be impossible. We can take advantage of internal mass, effective glazing and good insulation to significantly reduce our need for artificial heating. In summer we can use improved natural ventilation methods instead of relying on air conditioners and use internal skylights to reduce the need for artificial lighting.

The housing industry has shown itself to be very slow to adopt proven, new ideas. Solar water heaters, pioneered in Australia in the 1950s have been installed on only 5 per cent of our houses. Why? Even cold and cloudy Denmark has more on show.

Australia is currently a leader in photovoltaic research, in which silicon is used to convert sunlight into non-polluting electricity. Yet current housing designs show no evidence of this environmentally beneficial approach that could significantly reduce greenhouse gas emissions and owners' electricity bills. Worse still, many contemporary hipped roofs are so

broken up as to make it almost impossible to add photovoltaic systems later on. In contrast, the use of photovoltaic cells is expanding at a rapid rate in many overseas countries that have far less sunlight. Why are we not learning?

In Australia, the housing industry appears to be looking backward to meaningless Victorianism - of porticos, pediments, featurism and fancy balustrades, instead of investing in thoughtful design that can reduce running costs and provide better quality living. Houses have grown larger (despite smaller family sizes) and there is little internal mass to keep houses warmer in winter and cooler in summer. Natural, vertical ventilation is almost unheard of and air conditioning is installed to make up for the design inadequacies at much greater capital expense. Why?

And why are we seeing so many narrow blocks, oriented so badly as to make it impossible to fit solar houses on them? They will be the slums of the future.

The French General, Field Marshall Leyoutey, once asked his gardener to go out and plant a tree. The gardener protested, saying that the tree was slow-growing and would not blossom for 100 years. "In that case," replied the General, "plant it today!"

Large houses cost more to build, more to furnish, more to heat and to insure. Environmentally sensitive (*eco-logical*) houses, on the other hand, reduce most of these costs. Further, they are more self-reliant and sustainable in the long term.

Today's housing will be seen by future citizens as pompous, consumptive, illogical and not in the interests of buyers or the environment - leading to the inevitable question of whose interest do they really serve?

Society's attitudes can, and must, change if our children are to have a future that is sustainable. It can be done. Witness the way in which smoking has come to be regarded with public disfavour in recent years. The housing industry, if it is to be regarded as responsible, has to change toward a state of sustainability.

Just suppose you are a potential house buyer with a choice of two houses - one has a grand entrance with columns and steps at the front, giving an impression of opulence to the street. It has ducted heating, carpet throughout, lots of space, an impressive kitchen with all the gadgets, requiring a mortgage you can't really afford, plus running costs to keep you poor. Further, it will be a freezing house when the

gas runs out or simply gets too expensive to use, hot in summer (no external sunshades and no natural ventilation) and the final straw - a house you will find hard to sell in the future. That is your first and (usually) only option in the current market.

Your second option might be effectively oriented to the sun, having ample solar windows with adjustable sunshades to keep out the summer sun, but allowing all the winter sun to warm the house. It has enough internal mass and natural, vertical ventilation to keep the house cool in summer, needing no electricity to make it work. It has smaller but adequate rooms (easier to heat), no dishwasher, air conditioner, or clothes dryer, very low running costs, and photovoltaic panels (on a simple pitched roof) that supply most, if

not all, of your electricity. Tanks will save the rainwater for all household uses and all the greywater will water the garden. A reflecting system will provide warming sunshine in the *southern* rooms in winter which will be much

more comfortable to use. At the end of your stay (if you ever want to leave) you will have a very attractive, readily saleable house in a future, energy-hungry market.

These are comparable, feasible options - which would you choose? And more to the point - why is it that you can't find such an effective house for sale today?

(Thanks to Dr Murray May for concise and constructive criticism.)

Derek Wrigley

Derek F. Wrigley, OAM, is a retired architect and NSF member. He lives in a medium density Canberra house built in 1984. He has retrofitted it to achieve very comfortable living conditions with sunlight in all rooms and extremely low running costs. He is the author of the book "Making your home sustainable" (2004).

Derek can be contacted through the NSF office.



When the Rivers Run Dry

"The maps in an atlas no longer accord with reality. The old geography lessons about how rivers emerged from mountains, gathered water from tributaries and finally disgorged their bloated flows into the ocean are now fiction."

Fred Pearce's new book *When the Rivers Run Dry* details the horrendous state of many of the world's rivers. According to a review of Pearce's book in *The Canberra Times*, on average over the last fifty years, two new giant dams have been completed every day. Many of the most famous rivers don't make it to the sea these days, or are only sustained by the outflow from sewerage works.

When the Hoover Dam was built about seventy years ago this was pioneering work and met with wide acclaim. Gradually the problems caused by damming rivers have become apparent. They destroy the ecology of the valleys dammed and their surroundings and modify that of the rest of the river, preventing the passage of fish and other animals. In heavily farmed areas they destroy farmland and disrupt communities with forced evacuations of large populations. Greatly reduced water flow in a river destroys or severely modifies the estuary with resultant destruction of local fisheries.

It is not only rivers that are suffering under our ever increasing need for water; aquifers in many countries are being pumped dry. In the *New Scientist* in February, Pearce wrote of this developing problem. As an example he wrote of the experience in India. Formerly bullocks were used to haul buckets of water up from shallow wells. About ten years ago cheap electric pumps came on the market. Enterprising farmers hired drilling rigs to sink wells to enable them to irrigate their fields. More than twenty one million farmers are now mining the ancient water in aquifers to meet the demand for farm produce.

In one village in Gujarat the water table is now 150 metres down and falling by six metres per year. There are places where wells 400 metres deep are running dry. One estimate is that the

annual extraction of ground water in India is about 250 cubic kilometres, at least 100 cubic kilometres more than the annual recharge.

The results can be devastating. In Tamil Nadu two thirds of hand dug wells have failed and in ten years the amount of irrigated land has halved. People are walking off the land and suicides are rife in the farming communities in both Tamil Nadu and Gujarat. The dispossessed move into cities, but they still need food and water.

As rivers run dry from China to Iran and in the Indian subcontinent, the aquifers are also under enormous pressure. There is over-extraction in those countries and many others including Mexico, the USA, Argentina, Brazil, and Morocco.

Perhaps the most important lesson from our exploration of the solar system is that the most terrible place on Earth is a Garden of Eden compared to the best place anywhere else. We must find out how to keep it that way.

*Robert L Park
New York Times
15 January 2006*

Just as the introduction of electric pumps was a local initiative, with farmers acting in what they saw as their own best interest, now a new movement has arisen, local rainwater harvesting. This is largely a rediscovery of traditional methods.

When the British arrived in India several centuries ago, they found that villages and cities had their own systems of lakes, ponds and tanka to store water. (Tanka were shallow, mud-walled reservoirs in valleys, where they harvested the monsoon rains. They gave us our word tank.) Reverting to their old practices, some 20,000 villages are now seeking to live on just what the rains deliver. Some cities are also reviving their rain harvesting networks.

In Mexico, Peru, China and Tanzania governments and communities are experimenting with similar water harvesting schemes. These give control of their water back to locals. On the other hand they are not likely to provide the food surpluses that irrigation and the green revolution provided. It is not often realised that that boost in food production was largely the result of irrigation. The world now grows twice the food it did before the green revolution, but it uses three times the water to do so.

With any solution to a problem that humanity devises there seem to be pros and cons.

Readers of Pearce's article were quick to point out that rain harvesting in the higher reaches of a river will result in lower flow further down its course. This has happened in Australia, where subdivision of large rural properties into 'lifestyle' developments and hobby farms has led to the installation of many water tanks and farm dams, with a resultant lack of run off into local streams.

None of the letter writers to *New Scientist* however drew the only conclusion I can see. If local water harvesting, damming rivers and mining aquifers are all bad, then there is too much demand for water. The only solutions are fewer people and less demand for growing food and other crops, especially for export.

Jenny Wanless

Life Centres

(see page 4)

Stephen Boyden outlined his vision for Life Centres in his book *'The Biology of Civilisation'* in 2004. These are extracts from that book.

Our present behaviour is typical of failed societies at the zenith of their greed and arrogance.

*Ronald Wright
A Short History of Progress*

For the cultural reform process to gain the necessary momentum I suggest we need to introduce a new element into the system — in the form of a novel kind of public institution that focuses on the processes of life and the health and well-being of people and the natural environment. For the purposes of this discussion I will call these new institutions 'life centres'. I envisage networks of life centres across the nation.... Their overriding theme can be encapsulated in the phrase 'healthy people on a healthy planet' — reflecting the reality that human well-being is ultimately entirely dependent on the health of the natural environment....

Broadly speaking, life centres will have two important social functions. First they will aim to improve understanding across the community of the processes of life, the human place in the living world, and the major ecological and health issues facing society today. Second, they will stir up interest in practical measures that can be taken by individuals, businesses, local authorities and national governments to achieve ecological sustainability, health and equity....

Their educational role. First and foremost life centres will play a direct educational role.... Relevant information, systematically extracted from the natural sciences and other sources, will be put together in a form that is readily understandable to the interested members of the public — free from academic jargon.... It will be communicated in interactive workshops and courses, as well as in displays and publications and on the internet. Life centres will thus form a dynamic bridge between the scientific community and interested members of the public on matters relating to the well-being of people and of the natural environment.

Stimulating debate and practical action.

Second, life centres will provide much-needed public forums for informed discussion and debate about the future of society and about

the practical meaning, for individuals, families and societies as a whole of the current scientific understanding of ecological and health issues.... Topics are likely to range from

actions that can be taken by individuals and families, like changes in lifestyle and retrofitting homes to reduce fossil fuel use, through to changes that need to be made at the societal level — for example in economic arrangements, electricity generation, transport systems, aspects of land-use and education.

A local hub in a global movement. Third, life centres will provide a clearinghouse for information on important progress that is being made, locally and globally in the shift towards a bio-sensitive society....

Culture and enjoyment. I picture life centres as also having an important social dimension. They will be a source of enjoyment for persons of all ages offering a convivial and pleasing setting for creative learning, social interaction, personal involvement and communication.

By-passing obsolete structures. Life centres will fill a serious gap in the institutional structure of our society, by providing a new framework for constructive collaboration in the environment and health arena between community groups, scientific and professional bodies, businesses, schools, government departments and various other organizations.

Book Review

Fouling the Nest: human filth and pollution

By Cedric A Mims

Sheriff Press 2006

214 pp. \$30 from Smiths Books, Canberra, or from the author: 20 Wells Gardens, Griffith ACT 2603.

This book, by friend and contemporary of NSF patron Frank Fenner, is 'the strange story of human skin scales, sweat, and corpses, of sewage, rubbish and pollution'. As a microbiologist, Cedric Mims admits that he loves 'dirt and filth'. Unfortunately, this reviewer has a weaker stomach and after reading the early chapters on foreskins, placentas, various bodily smells and secretions, foetuses, saliva, urine, faeces, vomit, and farts, just about had her head in a bucket.

Nevertheless, the early chapters are a mine of information on all the things one never talked about at the dinner table.

For instance, he discusses how we might deal with the millions of new corpses that we have each year. He suggests an environmentally friendly corpse disposal machine – the compostorium – that involves first a macerator and then a giant fermentation tank. Microbes would digest the macerated fragments yielding methane to power the plant and fertiliser rich in nitrogen and phosphorous. Not for my dear Mother, I thought, and no doubt others will feel the same, despite the idea's excellent environmental attributes!

After the chapters on the things we discard from our bodies, or the bodies themselves, the book moves onto the man-made materials we discard and the effects on the environment. And the effect on the environment is not at all good. The present state of the planet, he writes, justifies the greatest concern. We are causing enormous damage to the Earth's ecosystems. As the 2004 Millennium Ecosystem Assessment noted, human activity has changed ecosystems more extensively in the past 50 years than at any time in human history.

Mims deals at length with our most significant 'discard': greenhouse gases. He looks at the effects of global warming on the environment

and what we might do about it, the most obvious strategy being to cut back on fossil fuels. Not easy, of course, given rising demand from China and India as well as in already industrialised countries. He covers the various options in renewable energy as well as nuclear fission and fusion. His discussion of the latter was reasonable but he failed to mention the critical statistic, namely, that the energy payback time for nuclear power stations is 40 years, even though they might be able to develop 'clean' power within 8-10 years of a decision to build.

In a short discussion on the role of environmental degradation in the collapse of various societies, Mims starts to gather momentum on the issue of population growth. Then, in his final chapter, he writes:

'... the fundamental problem, so often not addressed, is human numbers. There are already too many of us, and we cannot continue to multiply...'

'The greatest departure from the planet's natural ecological restraints has been the increase in human numbers to far beyond carrying capacity. The increase was made possible at first by agriculture and second by the use of fossil fuels for energy. Both

eventually result in the destruction of nature's ecosystems.'

Mims warns that the three horsemen of the apocalypse - famine, war and pestilence - may yet take a hand in our fate. Within 20 years, there will be less than a hectare of arable land per person in the world and climate change will cause agricultural productivity to falter, raising the spectre of famine. Wars may break out over competition for space, food and goods. But the most likely horseman, he argues, is pestilence. A change in HIV to make it spread by droplets, or a new and virulent form of influenza - either could devastate our crowded species. We should heed Mims' warning: he was, after all, once Professor of Microbiology at Guys Hospital Medical School.

In its relatively small size and comprehensive overview of the problems confronting us, it is somewhat reminiscent of Ronald Wright's *Short History of Progress*. As a scientist, Mims writes well for the lay reader. The book, however, could have done with an editor to pick up minor mistakes in fact and punctuation.

Recommended.

Jenny Goldie

*Medical experts worry that nature
may swat us with disease: billions of
overcrowded primates, many sick,
malnourished and connected by air
travel, are a free lunch waiting for a
nimble microbe.*

*Ronald Wright
A Short History of Progress (p 130)*

How to deal with activists

Ronald Duchin worked as a special assistant to the US secretary of defence before becoming a public relations executive. Activists, he explained, fall into four categories: radicals, opportunists, idealists, and realists.

In a 1991 speech to the National Cattlemen's Association convention titled *Take an Activist Apart and What Do You Have?* he presented a three-step strategy to neutralise activists: (1) isolate the radicals; (2) cultivate the idealists and educate them into becoming realists; then (3) co-opt the realists into agreeing with industry.

According to Duchin, radical activists: "want to change the system; have underlying socio/political motives [and] see multinational corporations as inherently evil.... These organisations do not trust

the...federal, state and local governments to protect them and to safeguard the environment. They believe, rather, that individuals and local groups should have direct power over industry".

Idealists are also hard to deal with. "Because of their intrinsic altruism, and

because they have nothing perceptible to be gained by holding their position, they are easily believed by both the media and the public, and sometimes even politicians." However, idealists "have a vulnerable point. If they can be shown that their position in opposition to an industry or its products causes harm to others and cannot be ethically justified, they are forced to change their position.... Thus, while a realist must be negotiated with, an idealist must be educated."

Opportunists and realists, says Duchin, are easier to manipulate. Opportunists engage in activism seeking "visibility, power, followers and, perhaps, even employment.... The key to dealing with [them] is to provide them with at least the perception of a partial victory."

Realists are able to "live with trade-offs; willing to work within the system; not interested in radical change; pragmatic. [They] should always receive the highest priority in any strategy dealing with a public policy issue.... If your industry can successfully bring about these relationships, the credibility of the radicals will be lost and opportunists can be counted on to share in the final policy solution."

Practising personal change should precede, or at least go hand in hand with, lobbying for government and institutional change. For it will only be with the experience that comes with personal change that we will get the wisdom to make the proper societal change.

*New Solutions, March 2006
www.communitysolution.org*

Thomas Jefferson wrestled as we wrestle today

For the past 150 years Americans have tried to reconcile the fact of Thomas Jefferson's slave-owning with his pursuit of liberty and freedom. The following is a recent attempt at explanation, using an analogy from contemporary globalisation. On that count alone, it would be relevant to NSF. But if we bear in mind another analogy, from that of climate change and our personal ecological footprint, the message is even more poignant.

Although Jefferson rationalised his slaveholding by keeping slaves in a style that exceeded most whites of that day, it was nonetheless a rationalization of slavery and his own lifestyle was made possible by slave labour. Many

Americans are righteously indignant and quick to judge him harshly. But to them I would ask 'how many are willing to free our own slaves?'

I'm typing these words on a computer containing parts made in countries where labourers exist with less freedom and in conditions

worse than those of Jefferson's slaves.

My rationalisation is that no companies in America or other developed nations make those parts any longer and without parts from China or Malaysia I'd have no computer. But it's just a rationalisation, just like Jefferson's.

Sitting at my keyboard I notice my shirt is made by modern-day slaves in China where workers who try to organise are imprisoned ... I can rationalise all the products of distant slaves that I use. I didn't have to look into their faces like Jefferson did ... My rationalisation is that we didn't end slavery, we just simply exported it and we are accelerating that export with NAFTA and the World Trade Organisation. But it's so much more comfortable for us to sit around and self-righteously criticise Jefferson who agonised over slavery in his time and yet we still use slave labour when we don't have to look into the faces of labourers who make the clothes we wear, the tools we use. This is not an issue that has gone away.

Thom Hartmann
Broadcast on ABC RN, 6 January 2006

Thom Hartman is the author of *What Would Jefferson Do?*, (2005)

Freecycle

Freecycle is an international internet network with 89 sites for communities across Australia. Freecycle gives anyone the opportunity to advertise items they have to give away free. It has been called “ebay with a conscience”.

Based on the premise that one person’s trash is another’s treasure, it is the brainchild of Deron Beal, a 38-year-old charity worker in the US

“You could say I was a professional junk collector,” Mr Beal explains. “I was working for a recycling organisation and I’d hang around dumpsters saving usable items and delivering them to non-profits who could use them. But it got to the point where I was spending all my time driving around to charities and no time saving things from the dumpster. One thing led to another and that’s how Freecycle started. I thought if I gave it a nifty name, it might just take off.”

And take off it has. The Canberra group has over 1500 members and Melbourne over 9000. At the other end of the scale, Alice Springs and Atherton have 20 members each.

Freecycle is very much a local activity and community spirit plays a big role – partly because of the size of many of the objects, and because they are given to the donor’s choice of recipient rather than to the highest financial bidder. The local emphasis keeps the bulletin board at a manageable size, with the community moderator responsible for ensuring members play by the rules.

“That’s what we’re about - empowering people on a local level,” Mr Beal says. “People said all along that the internet should be a democratic tool empowering people to make change, to make the world better. But up until the last year or two, I don’t think we saw much of that. We saw it used as a university and government tool, and a tool of commerce, but it’s only now that we’re starting to see democratic grassroots uses.”

As Turnock points out, the largest number of beneficiaries of public health can never show up at a public hearing and can never write a letter to the editor praising their health department because they have not yet been born. The public health movement is constantly working to make sure the world our children inherit is a decent place. But often theirs is a thankless job.

*Rachel’s Democracy and Health News
13 April 2006 – www.rachel.org
Bernard Turnock’s ‘Public Health, What It Is and How It Works’ is now in its third edition*

Here is what Freecycle says about itself:

First, what Freecycle is NOT about:

- Freecycle is NOT about giving only to the poor.
- It is NOT about getting as much free stuff as you can.
- It is NOT about getting things to earn money on the side.
- It is NOT about getting rid of junk that is better off in the landfill.
- It is NOT about having other people cater to you because you have transportation issues.
- Freecycle IS about keeping things out of the landfill.
- It IS about giving away something that has no use in our life any more to someone who could extend its usefulness a little longer.
- It IS about giving gifts to people while clearing out our own clutter.
- It IS about community.

When you post an offer, you are offering to give someone a gift. It is up to you to give this gift to

whomever you feel would be the best recipient. You can choose the most polite, the rudest, the funniest, or the shortest response to receive your gift. It is up to you.

You can also post a wanted ad. When you post a wanted ad, or respond to an offer, you are requesting a gift.

More information at: www.freecycle.org, including a list of over 8000 Freecycle groups worldwide.

The BBC Scotland recently had a news item on Scottish Country Dancing as a method of combating obesity in children. (And in adults. And it’s fun. Editor)

Another response from an e-mail interest group

Members of the NSF climate change interest group were recently e-mailed an article outlining a UK proposal to issue tradeable carbon permits to small and medium enterprises as well as large companies. The following is the response from one group member.

There is no question about the need to reduce emissions but, particularly – in the light of James Lovelock's warnings – we should be able to do far better through much more effective market mechanisms.

Effectively we need to – and with existing eco-technologies can already – reduce our carbon footprint in our habitats and industries by up to 80 per cent by simply analysing and re-designing systems. This can be demonstrated through the adoption of combinations of passive designs, integrated work, living, social urban eco-villages, e-commuting/commerce, appropriate technologies, new materials and zero waste strategies.

What remains missing are the market mechanisms and incentives to implement these options. As long as the status quo protects itself through externalising its real costs and with subsidies and regulations limiting alternatives, it will just accelerate itself over the edge. Permits and credits as proposed are simply window dressing to 'talk the talk' but not change privilege. Consistent with their rhetoric and laws promoting free market forces and competition, effective solutions can come about only when we use these same laws to force all externality costs and consequences to be internalised. Consequently the issue is not CO₂ emission permits but introducing the full CO₂ impact costing (and payment of these costs through taxes) on all non-natural additional CO₂ production.

To make it politically palatable this could be introduced progressively over 5-10 years to drive re-design and replacement strategies with the taxation income being used as industry loans to support these conversions with

repayments being possible from the savings generated. All our economic and policy experience tells us that markets are effective at efficiently catalysing change but totally depend on the price signals being clear and effective. We presently get markets to do what we want by distorting these price signals with subsidies, externalities, regulations and other impediments to logical, environmentally-sound change.

The fact is that we have known this for at least 70 years (since Keynes), so it is really a question of political will. Our politicians of course also fully understand this and skillfully use platitudes, 'greenwash' and red herrings like carbon permits to neutralise community demand for change thereby protecting their dominance of the status quo – their real

purpose and also that of their corporate donors.

Consequently the issue is not about green alternatives but really about what level of control we allow these political/economic processes to have on our collective lives and futures. We have options but can only exercise them if we consider and overcome

such structural impediments.

Further to your comments on climate change and its detractors, it's been amusing to see all those die-hard climate skeptics on the right wing of the media suddenly become the greatest proponents of urgent climate action when writing in support of nuclear energy and uranium sales.

*Fiona Katauskas in
Crikey.com.au
19 April 2006*

Media distortion

"The peak of world oil production is happening right now," Ken Deffeyes, professor emeritus of geology at Princeton University, confidently declared. "Here is the most important story since the Industrial Revolution." Deffeyes went so far as to attack news articles for including critical voices, saying attempts at being fair have obscured the truth. "Editors are one of the great enemies of the people right now," he said.

A more complete version of Deffeyes' criticism is that the media often cover important issues superficially. Instead of presenting intelligent analysis, they quote two different sides, without investigating the trustworthiness of the sources or the underlying issues. This isn't fair journalism; it's lazy journalism. It favours well-financed propaganda sources.

*Bart Anderson, Energy Bulletin, April 2006
Editor, The Energy Bulletin
8 December 2005*

NSF e-mail interest groups

As mentioned in February, to help get information to NSF members relevant to their fields of interest we have set up 'interest groups', based on the interests people have told us about on their membership forms. There are now thirteen groups:

Architecture and design

Climate change

Economics/society/politics/culture

Education

Environmental policy

Farming

Food security

Health

Marine environment

Peace/war/conflict

Population

Transport

Zero waste and recycling

By targeting our information in this way we avoid burdening members with e-mails that are less relevant to their interests. At the same time, we hope that members receiving the e-mails will be able to use the information provided for the benefit of the environment – lobbying, talking with friends and other public activity.

A small number of members who are not on e-mail also receive occasional bulletins by post. If you would like to receive paper copies of any of the above bulletins, please contact the NSF office.

One in 11 US households rents storage units for household possessions that do not fit in their homes. Many of these items are unused and still in their unopened original packaging.

The collapse of the first civilization on earth, the Sumerian, affected only half a million people. The fall of Rome affected tens of millions. If ours were to fail, it would, of course, bring catastrophe on billions.

Ronald Wright
A Short History of Progress

Nuclear Power Passé?

Writing in *New Scientist* (22 April 2006) Michael Brooks suggested that economics is now against nuclear power, despite the current interest shown by governments and the media. This resurgence has been caused by the fact that the reactors that are now contributing electricity to the grid in the USA and Britain are nearing the end of their useful lives, and their demise could leave a big hole in electrical supplies in these countries.

The problem for the nuclear industry is that new plants take a long time to build and commission. Few new stations could be in operation by 2020. This problem is compounded by a shortage of skilled and experienced staff; there are few suitable people

left in the workforce. As new energy sources will be needed to make up the shortfall the gap will be filled and there will not be any need for the nuclear stations.

Last year was the first year in which nuclear power's electricity generation fell below that of small-scale plants producing low or no carbon dioxide emissions. Many of these small-scale plants are combined heat and power cogeneration plants with average carbon dioxide emissions less than half of that of large gas-fired plants. There is also rapid uptake of solar and wind power. According to Brooks, new wind power plants in Spain and Germany added as much capacity in 2004 alone, as the world's nuclear industry will have provided in the decade 2000-10.

The California-based Electric Power Research Institute says that implementing energy efficiencies along with technologies that respond to changes in demand will provide a cost effective alternative to adding new generating capacity. The EPRI has estimated that the USA could save three quarters of the electricity it now uses.

Putting all this together means that there would not be much incentive for investors to enter the nuclear industry. They could look for better, more secure investments with quicker returns in the alternative energy market. The world no longer needs nuclear power.

Jenny Wanless

Farrago

Mynas

The common Indian myna achieved the distinction of being listed in the top one hundred invasive species in the world about five years ago. The bird is certainly on the increase, with populations estimated at about 300 to the square kilometre in Canberra and more than three times that in Cairns.

Indian mynas occupy hollows in trees, depriving parrots and small mammals of these shelters. The birds are aggressive, evicting the previous occupants by swooping and pack behaviour. They can inflict serious damage on small mammals.

Chris Tidemann, of the ANU, has developed an aviary-style trap which selectively traps mynas, holding about fifty of them. The birds are then gassed humanely. Now Chris has funding to develop and test a new roost-style trap that holds a synthetic tree. The mynas will be enticed by a playback of their roost choruses. This trap will hold a much larger group of birds and will be tested in both Canberra and Cairns.

ANU Reporter, Spring 2005

Venom Insecticide

The venom of female mouse spiders kills insects but is not toxic to vertebrates. A study of the peptides in the venom has shown that just one of the peptides is lethal for insects. This one has quite a different structure from the other peptides and it targets the voltage-gated calcium channels (VGCCs) on insect nerves, cutting off the transmission of nerve signals. As no existing insecticides kill insects in this way the find opens up the possibility of developing new insecticides targeting VGCCs.

Australasian Science, April 2006

Wallaby Milk

When molecular biologist Jane Whitley looked inside a Tamar wallaby's pouch she wondered how the tiny joey could survive in such a filthy environment. The youngster has to survive its first hundred days before its immune system develops, so its mother's milk must provide it with very powerful protection from infection.

Analysis of the milk has found a chemical that is a hundred times more effective than penicillin against bacteria. It is probable that the milk from some other marsupials and monotremes also contain powerful antibacterial substances. This opens up the prospect of a new range of treatments to replace the antibiotics that are losing their effectiveness as bacteria evolve resistance to them.

The Canberra Times
29 April 2006

Animism has traditionally been considered backward and lacking in objective validity by Western scholars, but today philosophers, psychologists and scientists in our culture are beginning to realise that animistic peoples, far from being 'primitive', have been living a reality which holds many important insights for our relationships with each other and with the Earth. One such insight is that animistic perception is archetypal, ancient, and primordial; that the human organism is inherently predisposed to seeing nature as alive and full of soul, and that we repress this fundamental mode of perception at the expense of our health, and that of the natural world.

Stephan Harding
Animate Earth: Science, Intuition and Gaia (p.21) (2006)

Vertical Wind Turbines

New look vertical axis wind turbines could be the answer to all the objections faced by wind farms. In Finland these new turbines are operating in the Arctic climate and producing fifty per cent more electricity than the traditional horizontal axis generators. These Finnish ones look rather like a sculpture – a pole supporting a flame, really two spiral-formed vanes, rotating upright. Others can look like an

eggbeater, weather vane or box kite.

They can all operate at lower wind speeds than the wind turbines to which we are accustomed, but they are also safer in high winds and are not prone to structural fatigue. They are omnidirectional and can be put on urban rooftops or industrial chimneys, as well as in open country. The spiral rotating blades look like a solid object from any angle so birds will avoid them. And there is no annoying hum.

The Canberra Times 29 April 2006

Ferrofluid generator

Ferrofluids are suspensions of magnetic particles in an inert liquid. When Jeffrey Cheung accidentally spilt ferrofluid on a bar magnet and found that the fluid acted as an excellent lubricant so the magnet moved very easily, he thought of many ways to use his discovery.

One of these uses it as a self-charging battery, in which any random movement will rock a magnet over coils. The first commercial product will be a holster-style mobile phone charger, with the random movement provided by the wearer.

Oceanographers at the Scripps Institute tested one of Cheung's devices and found that it generated electricity in even the gentlest sea. With modifications it could provide power for the buoys that are used in oceanic monitoring. Cheung also hopes to scale it up to make energy farms on the ocean.

Cheung's generator will run day and night, in any weather. It is hermetically sealed so corrosion should not be a problem.

New Scientist 25 March 2006

Biomimicry

Nature has been taken as the model for two new designs to utilise wave and tidal power to generate electricity. A company, Biopower, has models ready for testing in water tanks.

The Biowave model has long tapering fins that sway as waves pass overhead, transferring this seaweed-like motion to a turbine. Biostream is modelled on a shark's tail, and 'swims' in the tidal current. Both units rest on the ocean floor, using a root system inspired by the way kelp grips the seabed.

Australasian Science May 2006



Fair Trade

Last year the ACT Legislative Assembly passed a motion to use fair trade products at its functions where possible. It now serves accredited tea and coffee at many of its committee and public meetings.

Recently a Papua New Guinea coffee farmer visited the Assembly to show off his product. Daniel Kinne, who has achieved organic and fair trade certification, now employs about thirty people. He reported that with the fair trade premium his local area of Goroka has been able to repair the road, allowing teachers and medical supplies to come into the area. They had bought text books for the school and supplied mattresses for the clinic.

Previously, when the growers were being squeezed by international price fluctuations, they often could not even cover the cost of producing their crops.

The Canberra Times,
3 May 2006

Inefficiency

Research a few decades ago showed that people at the top of the British civil service enjoyed better health than workers at lower levels, presumably

because they had greater control of their lives and so suffered less stress. This situation turned out to be true in other organisations, too. New research is showing that this has changed with changes aimed at improving efficiency. Now fewer people are expected to do more work, and the culture has led to people working longer hours under more pressure. No one at any level has job security and all are under pressure to do more. There is less time for family or for socialising. The result is increasing levels of stress, which cause illness. What a person will get depends on their own make up, whether they are prone to heart disease, mental problems or anything else, but it all has a big impact on the health (illness) budget.

Radio National, 22 May 2006



Contributions for the next edition of *Nature and Society* are invited now from all members. They should be sent to the editor, Jenny Wanless, 22B Jensen St, Hughes ACT 2605, ph 02 6281 3892, by 15 July 2006.

Contributions may be sent electronically. This journal was prepared using Office XP and PageMaker 7.0.2 (Windows). Contributions may also be sent on paper.

Items in *Nature and Society* do not necessarily reflect the opinions of the majority of the Forum members, but are published in the hope of stimulating thought and discussion.

This issue was prepared by Jenny Wanless and Keith Thomas, who also contributed the unattributed items and provided the quotations.

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