

Saturday
interview



By ROGER COOMBS

It all gets back to Micawber, who managed to reduce the complexities of economics to their vital essence: "Annual income, twenty pounds. Annual expenditure, nineteen, nineteen, six; result, happiness. Annual income, twenty pounds. Annual expenditure, twenty pounds, eight and six; result, misery."

That's the Micawber Principle, as spelled out in Charles Dickens' doorstopper of a novel, *David Copperfield*, and for those not old enough to understand the pre-decimal logic of it all, it's simple enough. Spend less than you earn (twenty pounds is about \$40) in any given year, and you'll be happy. Overspend, even by as little as sixpence (that's about 5c in the new money) and misery will surely follow.

Micawber is, of course, a parody, and he lives his life in constant deficit, failing eternally, despite his efforts, to heed his own admonitions. But parody or not, the principle is entirely sound. And all it is really saying is that if we don't live within our means, disaster is certain. And it's relevant in any system in which resources are consumed.

This week, at long last, the environment is front of mind for our politicians as the issues of climate change, the water crisis, carbon trading and energy policy all come to coalescence.

Two weeks ago, the CSIRO released a NSW Government-commissioned report which warned that unless we take drastic action to reduce greenhouse emissions, Sydney faces a wretched future.

By 2070, drought will be permanent. The temperature will be as much as 7C hotter. Bushfires will be unstoppable. Gigantic storm surges will ravage our coastline.

And last week, a global warning from the world's foremost climate-forecasting body, the Intergovernmental Panel on Climate Change: the world is warming up rapidly — and human activity is "more than 90 per cent likely" to be the cause.

By the end of the century, the world temperature average could be as much as 6.4C higher. In Australia, the head of the weather bureau's National Climate Centre, Michael Coughlan, summed up the result for us of that potential temperature increase.

"This will change, in some parts of the world, the way we live," he said.

The fact is, it's no longer possible to avoid the uncomfortable reality — we're "spending" the planet's resources faster than they're being replaced. And to continue the Micawber analogy, environmental "bankruptcy" is inevitable unless we take serious stock.

The first step is to come to a comprehensive scientific understanding of the scale of the problem, and of the interactivity of the financial, environmental and social systems by which human activity is driven. And that's the critically important work being undertaken by University of Sydney researchers.

Known as Integrated Sustainability Analysis, or ISA, the group is working to develop "quantitative analysis as it's applied to environmental and, more generally, to sustainability issues," says group member and physics research fellow, Dr Christopher Dey.

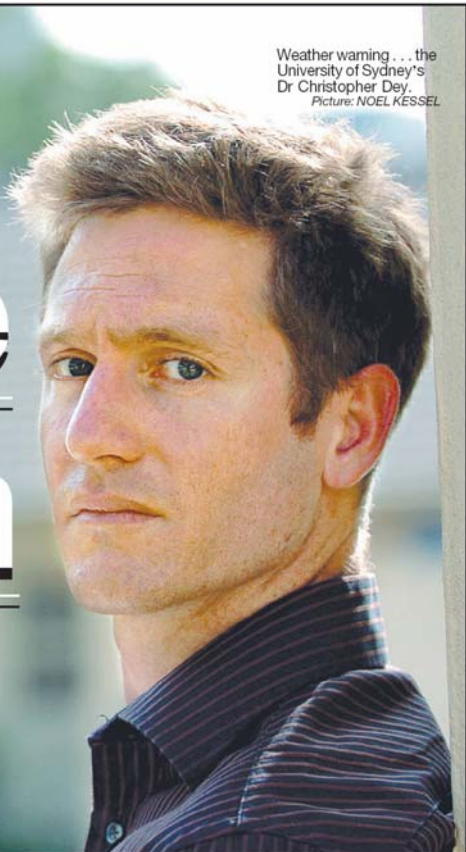
"As the name ISA suggests, we're trying to do analytical work — it's quantitative, dependable, rigorous, it's applied to sustainability generally — and it's integrated in the sense that we're trying to include a variety of indicators to get at the notion of sustainability," he says.

An indicator of sustainability, he explains, is the "ecological footprint" taken up by each individual — the land area required by each of us to sustain our lives and lifestyles.

"It's a measure of the impact of our lifestyle on the planet in terms of area," he says.

"The average Australian needs 7ha of land to be used — disturbed —

Earth's balance sheet in the red



Weather warning... the University of Sydney's Dr Christopher Dey.
Picture: NOEL KESSEL

to sustain their lifestyle. That is the average Australian's environmental footprint."

Do the maths, as they say. That's 140 million hectares. Our total land area is 760 million hectares.

"So some analysts say we have a surplus. But if you look at other developed countries, they don't have a surplus, they have a deficit," Dey says. "That's a simplistic model, but it is good to highlight the issue. And what it really highlights is that the resource usage which is essential to our lifestyle is way beyond our backyard."

"The global average is about 2.2ha. It's simplistic, because it obviously depends on the type of land, whether it's arable or not, and there's debate in the literature about how you actually measure the footprint. But the key thing about the ecological footprint is that it demonstrates that we're unsustainable in the world."

"We know that globally, humans are already using up more of the Earth's resources than are available long term. We're using up the Earth's capital. Moreover, if everyone lived like the richer nations, the developed nations, then we need four planets, basically."

That's not some fanciful science-fiction notion dreamed up by ISA to cause alarm. It's based on hard, scientific data. So we'd better take stock — either that or hope there's an undiscovered planet (or three) somewhere nearby that we can colonise.

For even in Australia, where we already enjoy a highly developed

lifestyle, our ecological footprint is growing larger, year by year, as our GDP expands apace.

"The usefulness of the footprint approach is that it tries to take into account everything that goes to support a lifestyle," Dey says.

"The key thing is that there's an economic model behind our calculations. And all the social and environmental and other economic factors are embedded in the model — those interactions are at the heart of our methods. It's standard input-output analysis. It's a technique used by most practising economists."

"Basically, it's just an understanding of how the economy interacts with the world."

So it's not revolutionary, not scientifically outrageous. It's real, quantifiable. And frightening.

The temptation of the "footprint" analysis is to heap all the blame for our greedy depletion of the world's resources firmly at the door of the consumer — us.

But it's not that simple, Dey believes. Putting all the onus on the consumer, and alleviating the producer of responsibility is rather unfair, he says.

"Producers are also able to make changes — to improve production methods. The reality is that you need both perspectives," he adds.

The worrying thing for Dey is that, notwithstanding the welcome increase in political sensitivity to the issues of environmental degradation, pollution, sustainable energy and so on, the level of debate has remained "pretty crude".

"The level of debate is poor. There's no sense of urgency," he says.

"The simplistic debate we had in Parliament this week was that if you do anything about environmental issues, it's going to impact on jobs. Now, there are always going to be debates about that, but frankly, they are crude."

"If we went considerably into renewable energy technologies, there would be new jobs, quite a few more jobs. Some of those technologies would be considerably more employment-intensive than the coalmining industry, for example. "Coalmining generates a lot of export income, we can't deny that, but the debate on the environmental, economic and social trade-off can be quite simplistic."

"So what we hope to be able to do [at ISA] is to put down figures which reliably demonstrate some of the trade-offs [required]."

While ISA does not want to be directly involved in the making of environmental/economic policy, the group is very much hopeful the indisputable relevance of quantitative analysis will be apparent to, and appreciated by, policy-makers.

Eighteen months ago, the Federal Government's Department Environment and Heritage commissioned ISA and the CSIRO to investigate the interaction of financial, social and environmental systems as they relate to the broad issue of "sustainability". The resulting 1000-page report — *Balancing Act - A Triple Bottom Line Analysis Of The Australian Economy* — is a

comprehensive evaluation of the concept of sustainability.

Co-authored by Dey, his colleague, physics professor Manfred Lenzen, and former CSIRO ecosystems analyst, Barney Foran, *Balancing Act* is an attempt at "a holistic concept where environmental, social and economic considerations are identified and can be considered concurrently in decision-making".

The May 2005 report, Dey explains, is "the first of its kind in the world" and documents the performance of 135 sectors of the Australian economy, not just in terms of their financial bottom line but also their social and environmental results as well; hence, the "triple bottom line analysis".

For in Dey's informed view, the old idea that firms could judge their performance simply on the basis of their financial results is well past its use-by date. If we are to be sustainable, the other factors must be considered. Development is no longer just about dollars and cents, supply and demand, profit and loss. The ethical dimension of development can no longer be ignored.

"Ten years ago, coming from a technology background, I had quite a technological optimism," Dey says. "We used to think it was only a matter of having better technology, that all our problems could be solved by better technology, better science. But the magnitude of the problem is far greater than we thought. The urgency of the problem has changed."

"We have far less time to really improve our environmental performance and energy is probably the biggest challenge."

"On greenhouse [emissions], we need to be starting to do something. Even if it's small steps we need to be taking them now if we're to have an impact in 20 years."

"Right now, we have a major problem in dealing with it, that's what makes climate change such an interesting issue. What you and I had for lunch today can affect the climate in 200 years, in a small, but measurable way."

It's about choice, Dey says. "If we want to have a different system in 30 years, we actually need to start now," he says.

It's a strong, but simple, message. If we want to have any kind of future at all, we need make some big changes starting from now.

Dey is not overly optimistic about our chances. So let's hope someone out there is listening.



Dirty business... the UK's Drax Power Station which puts more CO₂ into the Earth's atmosphere than every car in England combined and burns 220 tonnes of coal every day.
Picture: RICHARD CRAMPTON/REX FEATURES