

# **The Elephant in the Room**

**By Patrick Whitefield October 2009**

It was only with the development of the Gaia theory by James Lovelock and Lynn Margulis that we started to understand what the Earth really is. It's not a random collection of living and non-living objects which happen to suit the physical and chemical conditions they find on this planet. It's a system whose components are constantly interacting to create and maintain those conditions. Factors like the pH and salinity of the oceans, the composition of the atmosphere and the temperature of the planet are completely different from what they would be on a lifeless planet. We don't know for sure how much of the system needs to remain intact for the whole to be able to keep functioning. This is partly because of the long time-lag in natural systems between an action and its consequences, which means that we still don't know the full effects of the actions we've already taken. But it's also because we've never had another Earth to run the experiment on. We've only got this one and we're running the experiment now.

We've taken control of something like half of the Earth's land area and replaced the complex ecosystems that grew there with our own much simpler plantings, often monocultures. We're still doing this, particularly in the tropical rainforests, where most of the Earth's biodiversity is located. In other places plants and animals moved by us from one part of the world to another have grown over-vigorously and reduced local biodiversity drastically. In many parts of the world deserts are advancing. Overall, our actions have precipitated the sixth mass extinction event in the planet's history, possibly on a scale comparable to the one which did for the dinosaurs.

Much of the land we've appropriated is now severely eroded or impaired by salination, some of it to the point where it can no longer grow crops. Even where erosion is not a problem the soil is in a poor state, critically short of humus and treated with artificial chemicals whose long term effects we don't know. Over the past century hundreds of thousands of artificial

chemicals have been produced, many of them deliberately designed to kill one kind of life or another. These chemicals, along with mountains of indestructible plastic, now pervade the whole planet and its life-sustaining systems: the air, the soil, inland waters and above all the seas, the final sump for the rubbish of our industrial way of life. The long-term effects of these chemicals are unknown. So are the effects they may have when they combine and interact in ways never foreseen by their makers.

The human population has inflated on the back of a one-off boom in the use of fossil fuels. It's now almost certainly more than the Earth can support in the long term but it's set to increase by half as much again before it peaks out. The impact of our sheer numbers is multiplied by the desire of each individual for an ever-higher level of material consumption. Even if the population didn't grow, the increase in the use of resources and output of pollution per person would be more than the planet could bear.

I could go on, but I think I've said enough to make the point that the Earth is hardly in a condition to respond to a challenge to its health even greater than all these. I refer, of course, to global warming.

### **Global Warming**

The first important question to ask about global warming is how much do we have to reduce our emissions of CO<sub>2</sub> and other greenhouse gases in order to avoid catastrophe? This is not an easy question to answer because the whole subject is full of uncertainties. The only thing which can be said for certain is that as time goes by and more research is done the answers become more and more stringent: we need deeper cuts than we previously believed and we need to start sooner.

The main source of information on global warming is the Intergovernmental Panel on Climate Change (IPCC). The structure of the IPCC makes it inevitable that it should take a very conservative stance. It has to be authoritative. If any of its reports could be described as alarmist or extreme it would lose that authority and cease to hold the consensus respect it does. This

means its reports exclude aspects of climate change which are not yet fully understood, even if the contributing scientists are well aware of them and consider them important.

By ‘not yet fully understood’ I really mean not fully understood five to seven years ago. It takes some three years from the completion of a piece of original research to its publication in a scientific journal. Much of this time is taken up with the rigorous process of peer review, in effect a scientific quality control process. From publication to inclusion in the next IPCC report can take an additional 18 months to four years.

The members of IPCC are not themselves scientists but government representatives. They engage scientists to do the work but they reserve to themselves the job of writing the all-important Summary For Policymakers. They come under a lot of pressure from their governments not to rock the boat of economic growth, and every government has to approve the text. Until very recently this included the administration of George W Bush.

Given all these limitations it’s hardly surprising that the IPCC lags far behind current research. But it also lags behind current reality. In 1990 it presented a range of possible figures for future rises in CO<sub>2</sub> concentration, global average temperature and sea level, ranging from the very modest to the highest then believed likely. The actual rises in these factors since then have been at or above the very highest of these rates, while the melting of Arctic sea ice has gone off the scale.

Thus a study which uses IPCC figures as its data is safe from any accusation of exaggerating the seriousness of the situation. In fact the implication of such a study is that actually the situation is far worse than its conclusions suggest. One such study is that recently carried out by Kevin Anderson and Alice Bows at the Tyndall Centre for Climate Change Research, in which they attempt to answer the all-important question of how much we need to reduce our emissions. They used the most optimistic of the IPCC projections as their data. They also took as their target the generally-accepted goal of limiting temperature rise to no more than 2°C above the pre-industrial level – even though they reckon that a rise of 2°C would be ‘deadly’ for the poor people of the world.

The usual way of answering the question is to say that we need to reduce emissions by a certain amount by a certain date – 80% by 2050, for example. Anderson and Bows reasoned that this is not a sensible way of defining the task because when the emissions were cut would make a significant difference. If they were mostly made early in the period the total amount of CO<sub>2</sub> in the atmosphere in 2050 would be much less than if emissions stayed high at first and fell towards the end. A more meaningful measure is how much we have to reduce emissions each year, taking into account the effect of accumulated emissions. Their conclusion was that if emissions peak in 2020 we will need to reduce global emissions by 10% per year to give us a 50-50 chance of keeping the temperature rise within 2°. They note that we in the industrialised countries will have to bear the brunt of the cuts and reduce our emissions by perhaps 15 to 20% per year. That would give us a half chance of coming in under 2°, nothing more.

In the industrialised world this can only be done by reducing consumption. The amount of energy we use is just too huge for renewables to make a dent in it. Two recent examples illustrate how ineffective fuel substitution is on its own. One is the British ‘dash for gas’ in which our electricity industry largely changed its primary fuel from coal to gas, which emits much less CO<sub>2</sub> per unit of electricity than coal does. The other is the similarly massive expansion of nuclear electricity in France. Neither of these reduced emissions. They just held them steady for a while. Although the emissions per unit of electricity went down this decrease was drowned out by the increase in economic activity as a whole. The only example of an actual reduction in emissions in an industrialised country is the collapse of the Soviet Union, when emissions fell by 5% a year over a period of ten years.

To say that curbing global warming is not compatible with economic growth is a gross understatement.

So the Tyndall Centre study suggests that we have to reduce our level of consumption some three or four times as fast as the citizens of the Soviet Union did when their economy was in tailspin during the 1990’s. But it was based on IPCC data. Not only is IPCC data out of date

but, as Anderson and Bows themselves pointed out, it doesn't take enough account of positive feedbacks in the climate system.

A positive feedback is something which is both a result of something and a cause of it, in this case rising temperature. An example is the melting of ice on the Arctic Ocean and of snow on the surrounding land. The colour white reflects almost all the solar energy which falls on it while blue sea and green vegetation absorb most of it. This phenomenon sets up a vicious spiral of increasing temperature: the warmer it gets the more snow and ice is melted; the more they're melted the more heat the Earth absorbs; the more heat the Earth absorbs the warmer it gets; and so on. Another example can be seen in the exchange of carbon between the atmosphere and the biosphere. At present most of the world's carbon is stored in trees and other plants and in the humus of the soil. These currently act as carbon sinks, absorbing much of the CO<sub>2</sub> we emit. But as the temperature rises forests and soils stop absorbing carbon and start to release it. Meanwhile back in the Arctic the permafrost is thawing, releasing methane from the formerly frozen soil. Methane is some 25 times as potent as a greenhouse gas than CO<sub>2</sub>. All these positive feedbacks are already happening, though only at a moderate rate so far. A bigger one which lies in the future is a much larger store of frozen methane on the sea bed. Once the temperature rises beyond a certain point this will be released and it could dwarf all that has gone before.

There are other positive feedbacks in the system but I think these examples are enough to illustrate the point. There are also some negative feedbacks, phenomena caused by increasing temperature which tend to cool the planet. But, unfortunately for us, these are fewer and less potent. The implications of this are two. Firstly, any figures and projections which don't take full account of positive feedbacks will underestimate the rate of global warming and the necessary response. This includes Anderson and Bows' conclusions, which are based on IPCC data.

Secondly, there is not a one-to-one ratio between emissions and warming. Instead, there comes a point where the temperature has risen so far that the positive feedbacks alone are enough keep it rising. At this point those positive feedbacks which are already in operation get stronger and feed off each other in an ever-rising spiral. They trigger much bigger feedbacks, such as the release of the frozen methane on the seabed, which up to that point have lain

quiescent. This is known as runaway global warming. Once past the tipping point nothing we do will have any effect at all. So there are no second prizes in global warming. If we make a huge effort to reduce our emissions but come in just over the crucial tipping point, the effect will be the same as if we hadn't lifted a finger and had gone on with business as usual.

The second important question to ask about global warming is how far would runaway global warming take us. The short answer is that we don't know for sure. The highest of IPCC's projections leads to a temperature rise of 6°C by 2100. There's no reason to suppose that it will stop rising in 2100. That's just a convenient date to work with. Nor is there any reason to suppose that a rise of 6°C is the highest possible by 2100. IPCC's track record suggests that it isn't. Although it's within the IPCC range, hardly any climate scientists have tried to model what a six-degree world might be like. Our best guide is the record of the geological past. There has been one previous greenhouse event which is roughly comparable with a rise of six degrees and that's the one which ended the Permian period, 251 million years ago. It's not directly comparable with the present one, as the rising CO<sub>2</sub> levels were compounded by massive volcanic eruptions which released other toxins on a global scale. On the other hand the present situation is compounded by the debilitated state of the Earth's living system. If you wanted a planet to survive a major global warming episode you wouldn't choose one in this condition.

The end-Permian event resulted in the extinction of 95% of the species then in existence. Lush forests were replaced by sparse vegetation which has left no trace. Biodiversity didn't recover for 50 million years. The only large vertebrate to survive was a pig-like reptile called *Lystrosaurus*, which had things pretty much to itself for a long, long time. The question is will we humans be the new *Lystrosaurus* or will we be swept away with the other 95%? Of course no-one knows for sure. James Lovelock reckons not, with the chilling words: "humans are tough enough for breeding pairs to survive."

Some people have responded to this bleak outlook with the thought that maybe it wouldn't be such a bad thing for the Earth if we did become extinct. Although it may take millions of years, the biosphere would recover and eventually thrive again with a whole new range of species, as it has done five times before. Well, it might, but then again it might not.

Over the lifetime of the Earth the sun has steadily been getting hotter. This is a long-term, linear trend, on a much longer timescale than the cyclic variations in solar energy associated with sunspots. During the earlier period of life on Earth the amount of radiation coming from the sun was below the optimum for life to thrive. Then the gaian system acted to increase temperatures so as to keep them within the ideal range. Now we're well past the optimum point and Gaia is acting to reduce temperatures in order to keep them within the ideal range. Getting back to the optimum temperature range after a major warming event may be beyond the power of the weakened system when the output of solar energy is greater than it's ever been before.

A more immediate question is at what temperature will runaway global warming set in? The plain answer is that we don't know. Some people take the figure of 2°C above the pre-industrial average but it's really little more than an informed guess. We may already be too late. The global temperature is now at 0.8° above, and there's an additional 0.6° in the pipeline due to emissions already made. There's a long time-lag between cause and effect with global warming. The inertia in changing the temperature of an object as huge as our planet is considerable and we're now living with the effects of the emissions of the 1960s, when the rate of emissions was a fraction of what it is now. Even if we stopped all emissions today it would go on getting hotter. That gives us a rise of 1.4°. This may be very near the tipping point or even be past it. We really don't know.

One thing we do know is the urgency of the situation. Rajendra Pachauri, chairman of the IPCC, speaking in 2007, said, "If there's no action before 2012, that's too late. What we do in the next two to three years will determine our future." There may be a slight uncertainty about the timing in that statement but its message is clear enough. David Wasdell, a tireless campaigner on climate change, put it more vividly: "If a mother sees her baby sitting on top of a wall, rocking backwards and forwards, a little further each time, does she sit there and ask how many more rocks it's safe to leave the baby before she goes and picks her up?"

**To summarise.** By a conservative estimate we need to make cuts of 10% per year globally – 15 to 20% here in Britain – in order to have a 50-50 chance of avoiding a temperature rise of 2°. By comparison, when the Soviet Union crumbled its emissions fell by 5% per year.

But this calculation takes insufficient account of positive feedbacks, and the necessary cuts are almost certainly much deeper. If we should try our utmost and just fail the result would be the same as if we'd never tried at all. It may even be that we're already too late. We don't know. We do know that the consequences of exceeding the tipping point would be horrendous and possibly include the extinction of the human species.

### **Peak Oil and Probability**

Some people reckon that the increasing scarcity of oil may slow down global warming, but this is hardly likely. The most often quoted figure for the rate of oil depletion is 2% a year. In other words, once the peak of oil production is past, each year we'll have 2% less oil at our disposal than we did the year before. This is clearly irrelevant if we need to cut emissions globally by significantly more than 10% a year. We have to get in below the tipping point of runaway global warming. Minor cuts in emissions which fail to meet that target are a complete waste of time. Even major cuts which just fail by a whisker would be a waste of time.

In fact a shortage of liquid oil could actually increase emissions, because it would encourage people to make oil out of other fossil fuels. Tar sands and coal are two possible raw materials. Both of them need much more processing to turn them into liquid transport fuel than crude oil does and this processing takes energy, which means more emissions. The net CO<sub>2</sub> output of a gallon of petrol made from these materials is much greater than those of one made from crude oil.

A big problem with any discussion of global warming is the time lag between action and effect. The effects of what we're doing now lie in the future and the future is unknowable. Climate projections are getting better all the time. Computer models can be run on past periods whose outcomes are known and this gives a check on their accuracy. Increasingly we can also see the effects of the emissions of the recent past on the climate of the present. Nevertheless doubt always remains. We can only know something for certain once it's actually happened.

This means that the whole issue of global warming is one of risk management. In risk management two things need to be considered: how likely it is that the event will happen and

how bad it would be if it did. A high probability of something moderately bad requires the same degree of concern as a low probability of something very bad. In the case of global warming the consequences are unspeakably bad, so even the slightest possibility that it will happen should make dealing with it our highest priority.

A dose of scepticism about the science of climate change is no bad thing. But scepticism works both ways. When so-called sceptics raise doubts they always assume that it only works one way: that things are not as bad as the science tells us. A true sceptic holds that things may be better and they may be worse. In fact, the whole trend of climate science in recent years is that each new wave of investigation reveals that the previous one understated the case. Even if the ultimate consequences do turn out to be much less severe than what I've suggested above, they would still be horrendous.

### **Our Response**

The enormity and urgency of the crisis which faces us demands drastic action, nothing less than a revolution in our lifestyle. To have any chance of avoiding the tipping point which leads to runaway global warming we have to do everything we possibly can to reduce our emissions. We can't get away with making big cuts in most aspects of life but hanging on to a few favourite habits which just happen to be carbon-intensive. Coming second in this race means coming last.

It's often said that our response to global warming needs to be like that of the allied nations to the Second World War. Here in Britain the whole nation turned its energy from the pursuits of peace to a united war effort. People dug up their lawns and public parks to grow food. Farmers submitted to War Ag committees which told them exactly how to manage their farms, while everyone submitted to the rigours of food rationing. Iron railings were torn out to make guns and aluminium pans were collected to make aircraft. Communities scraped together every penny they could to get together enough money together to make a Spitfire, which would then be named after the town where the money was raised. Party politics were suspended.

In the USA the story is told how the heads of the great car manufacturers went to President Roosevelt and said, “Mr President, each of us is prepared to turn one of our production lines over to military vehicles.”

Roosevelt replied, “Gentlemen, you misunderstand. You’re going to turn *all* your production lines over to military vehicles.” And so they did.

And what did President Obama say to the present heads of the car manufacturers when they came to him saying that the economic recession was threatening them with bankruptcy? Did he say, “Gentlemen, this is the perfect opportunity to end the car culture. Turn half your production lines over to public transport vehicles and close the other half down right away”? No. He gave them hundreds of billions of dollars of taxpayers money so that they could go on producing cars.

Here in Europe the response to the recession has been the so-called ‘scrappage’ system: car owners are given a cash inducement to scrap their perfectly serviceable cars and buy new ones. The car industry is being kept going at all costs. Then there’s the third runway at Heathrow and the big new coal-fired power station at Kingsnorth. Words may occasionally be spoken about climate change but actions speak far louder. Parents are encouraged to send their children to any school of their choice, not just the closest one to where they live, and most of these children go to school by car. NHS patients can now choose to have their operation in any hospital, however far from home. Television is being turned over to digital, even though it uses more energy than analogue. The Post Office is planning to do away with bicycles and replace them with vans. These and a thousand other decisions, large and small, have quite clearly been taken under the assumption that global warming simply doesn’t matter.

The same assumption reigns at local government level, where planning permission is given for developments which can only increase energy consumption: here a new garden centre beside a main road far from any town; there a housing development whose inhabitants will have to commute long distances by road; everywhere yet more supermarkets. Supermarkets don’t just encourage more driving, they use prodigious quantities of energy within their doors, with heated

aisles and open chill cabinets constantly exchanging air which has to be re-cooled and re-heated. (For the full picture of supermarket energy use see George Monbiot's *Heat*.) The idea that we should even dream of building one more supermarket could only be entertained by people who completely ignore the effect on the climate. When Britain's only wind power factory closed down recently the reason given was that planning permission for wind generators in this country is almost always refused. The aesthetic preference of the local residents is seen as more important than global warming.

Even where modest measures to tackle climate change are proposed the prevailing attitude ensures that they're ineffective. Eight years ago the government set itself a target to cut CO<sub>2</sub> emissions from its own offices by 12% in 11 years. With just three years left they're still only half way to their target and the proportion of renewable energy used has actually decreased during that time. Jonathan Porritt, on retiring as chair of the Sustainable Development Commission, made the comment that throughout his time in the job he'd seen work on climate change constantly obstructed by civil servants who are committed to the values of Thatcherite growth.

Governments, whether national or local, are barometers of public opinion. We think of them as leaders, and they do their best to foster that impression, but the reality is that they follow rather than lead. Even Margaret Thatcher, who gave every impression of leading, could only go so far to the right. When she stepped too far and introduced the poll tax she was deposed. All politicians act within the confined limits that public opinion allows them. Their actions are no more than a reflection of the society of which they themselves are part. Any idea that the politicians are disgracefully lagging behind a public which would like to see more positive action is soon dispelled by looking at the choices that the public make in their daily lives.

Car culture reigns supreme. A full half of all car journeys in the UK are less than two miles, a distance that could easily be walked or biked. Queues of cars still creep along head to tail, almost every one occupied by a single person, while buses go by half-empty through lack of custom. When I recently told a friend that I would come to her party by bus she sounded shocked and desperately tried to find someone who could give me a lift, as though stepping inside a bus

was a hardship from which I should be protected at all costs. Homes are heated to tee-shirt temperature throughout the year. The idea of wearing a sweater indoors in winter seems not to occur to people unless they're too poor to afford the heating bills. The wasteful incandescent light bulb is still bought in far greater quantities than energy-saving long-life bulbs.

Then there's the annual holiday in the sun, not to mention the shopping weekend in New York or the stag night in Prague. Flying has become as much a part of the middle class way of life as driving. Air travel uses four times as much fuel per passenger mile as public transport and twice as much as car. To get the total global warming effect this needs to be multiplied by 2.7 in the case of air because the pollutants are released at high altitude. Using the most conservative figures, one return trip to New York uses up a person's entire annual allowance of greenhouse gases for all purposes at the level we need to aim for to avoid runaway global warming. Taking into account the more recent work on positive feedbacks, it would be more realistic to say that flying is something we need to stop immediately if we're going to have any chance at all. It's not just that it's the most global-warming-intensive thing that any of us can do, it's also in almost all cases completely unnecessary. We must eat, clothe ourselves, heat our houses and so on. Education and health care are pretty essential services too and they, like everything else we do, use fossil fuel energy. But most flights are purely for entertainment, and those who fly for work reasons flatter themselves if they think their personal presence on the other side of the world is more important than the future of the planet.

Yet even people you would expect to take climate change seriously still think flying is a perfectly rational thing to do, even to encourage. I support a charity which does excellent work helping African farmers to adopt more productive, sustainable methods. Recently I received an invitation from them to fly out to Malawi to see the benefit of my donations. Climate change will be catastrophic for Africa even if we do manage to avoid runaway global warming. Temperatures there are already near the upper limit for growing food and the patterns of rainfall are highly vulnerable to change. Whatever good the charity may do, and it does a great deal of good, it will be as nothing compared to the effects of global warming.

The same attitude prevails among people who come on the permaculture courses I teach. These are people who have devoted two weeks of their time and several hundred pounds of their money to coming on a course which is fundamentally about sustainability. Perhaps the occasional one is there simply because they want to improve their smallholding but most are motivated by a desire to do their bit to save the planet. Yet the great majority of them fly. Some even come to the course itself by air if it's ever so slightly cheaper or easier than surface transport.

The most extreme example I've come across was on a course I attended for Transition activists, surely the people you would expect to be more aware of global warming and more motivated to do something about it than anyone else on Earth. Here we actually took a count. Out of the 40 people who attended just two had given up flying.

Let's face it, our chances of avoiding runaway global warming are nil.

### **How is it Possible?**

How can there be such a huge gap between what we need to do and what we're doing? The information on positive feedbacks and their ultimate consequences which I've outlined above has been in the public domain since at least the beginning of 2007, when Mark Lynas' book *Six Degrees* came out. Since he was working entirely from published scientific papers it has actually been public for longer than that.

To some extent the gap is because most people don't know the full story. They're aware there is a problem but by the time the information has reached them it's so watered down that they can be forgiven for thinking it's not very serious. The chain of information, from original research via the IPCC and the news media to the general public, is a long one. I've already described how the IPCC process both delays and dilutes the research. The media dilute it further, to varying degrees according to the stance taken by individual newspapers and news channels.

Personally I get most of my mainstream news from BBC radio, a medium which you might expect to at least try to give a factual view rather than one distorted by political or

commercial pressures. Far from it. Until about a year ago, whenever the words carbon dioxide were uttered on the air they were always followed by ‘which is believed to cause global warming’. This was while some 98% of climate scientists were of the view that global warming was happening and that there was a 90% probability that it was human-caused. Whenever Radio 4 interviewed one of the 98% they also scraped the barrel to find a denier, whose views would then be given equal weight. This was presumably in the interests of ‘balance’ – a strange kind of balance, which gives equal weight to 98 and two!

Now that global warming has achieved a higher profile they can no longer get away with such blatant bias but they still minimise the subject whenever they can. For example, a couple of months ago the G8 nations announced their first ever firm target for a reduction in greenhouse gasses; it was given third place on the news. Radio 4 is probably not unusual in its stance on global warming. Their scale of values probably reflects those of the media generally. They regard global warming as important but nowhere nearly as important as financial news or the never-ending soap opera of Westminster.

You would have thought you could find a counterbalance to this kind of thing in a book on global warming by a climate scientist. Well not necessarily. Barrie Pittock, in the second edition of his *Climate Change*, published this year, makes very scant mention of positive feedbacks. The most he has to say about them is that they’re “not yet understood”. Very occasionally he allows himself to refer to the possibility of “catastrophe” but he never goes so far as to hint at what this might mean. There’s no doubt that he’s aware of the science but he seems to place a very high value on not frightening anyone.

The attitude of the education system to global warming is illustrated by the following quote from a school student in a letter to *Permaculture Magazine*, expressing her concern that what is taught in schools is largely irrelevant to the issues facing the planet now. “The environment and climate change are like side issues, mildly interesting topics that make nice assemblies now and then, but not to be taken too seriously.” If this is typical, any idea that the younger generation will rise up and berate us for not taking their future seriously is a pretty long hope.

But none of this is really the answer to the question I posed above. To put it all down to a mendacious media would be ridiculous. Journalists, like politicians, civil servants, local councillors, authors and teachers are not specially to blame. They're people like all the rest of us. They experience the same range of emotions and are subject to the same cultural influences. We can't expect them to think or feel differently from anyone else. The answer lies in the thoughts and feelings of ordinary people.

Most people seem to have devised some way of emotionally insulating themselves from global warming, a way of making themselves feel all right about the fact that they're not doing anything about it. Outright denial is pretty common. According to a survey published in *The Times* only 41% of the British public believe that global warming is happening and is caused by human action. Taken literally this means that over half the population think they know more about the climate than climate scientists do. But of course they don't really mean that. They just want to banish the whole idea and get on with their lives.

People have all sorts of ways of avoiding taking global warming seriously. These are some comments I've heard over the past few months:

"I don't mind about global warming but it just seems to me to be a way for the government to get more taxes out of us." This despite the fact that the government has conspicuously failed to use taxes in this way.

"It's a conspiracy between the government and the environmental organisations, so the government can get more taxes and the environmentalists can get more grants."

"If you have children you have to believe that somehow things will turn out all right." This from a person who takes at least two holidays a year, most of them by air.

"Maybe if the data on the climate were given to young people instead of scientists they would come up with a different solution." From someone whose daughter lives in Australia. She has my sympathy.

"I don't care. It's something that the next generation will have to deal with. I'll be dead by then." At least this guy was honest, although sadly mistaken.

“I am an optimist!” As though one person’s psychological makeup could determine the temperature of the planet.

The following response comes from someone who’s aware of the information in this essay: “I can’t take it on. I’d go mad.”

Perhaps with that last comment we’ve come to the nub of it. Even the bog standard line on global warming, which is infinitely milder than mine, tends to paralyse people into inactivity. George Marshall calls it ‘the Medusa effect’, after the character in Greek myth who had snakes for hair and was so shocking that people who looked on her face were turned to stone. The idea that we can spur people into action by giving them the facts about global warming is sadly mistaken. Show them *The Age of Stupid* and will they leap to their feet ready to do great deeds for the planet? Perhaps one or two will but the great majority will not. The Medusa effect will come on and they’ll switch off. This is the paradox we face: say too much and people switch off; say too little and they think it’s only a minor problem. Either way they do nothing.

This is not to say that people in the 21<sup>st</sup> century are unable to take action in a noble cause. Far from it. A million people turned out on the demonstration against the Irak war. It was the biggest demonstration ever in Britain and it wasn’t for a self-seeking purpose like higher wages or job security but against an unjust war which probably wouldn’t affect them personally. By contrast, last year 20,000 people turned out on the global warming march – one fiftieth as many. You could hardly have a clearer statement than that difference in numbers.

One reason for the difference is that we take more note of present problems than of ones we think of as lying in the future. This is in our genetic makeup. As a species we’ve spent almost all our time as hunter-gatherers. Our time as farming, let alone industrial, people is insignificant in evolutionary terms. We’re trying to manage an industrial world with the mental makeup formed by millions of years of gathering and hunting. In that situation the people who were most likely to survive were those who solved immediate problems, whether that was where the next meal was coming from or how to avoid being eaten by a sabre-toothed tiger. People who focused on the present were the ones who lived long enough to breed and pass on their genes. People who devoted more of their attention to future problems would inevitably have less of it available

for the present. They would be more likely to go hungry or become a meal for the tiger. The constant repetition of this sorting tendency over hundreds of thousands of generations has left us with a population in which the vast majority of people discount future problems, like global warming, in favour of present problems, such as economic recession, unemployment or war.

The second reason is that doing something effective about global warming would strike at the very heart of our culture. To slightly précis the words of George Monbiot,

“the campaign against climate change is a campaign not for abundance but for austerity, not for more freedom but for less. It is a campaign against ourselves.”

Consumerism is not just an aspect of contemporary life, to a great extent it *is* contemporary life. The extent to which consumption has become the central activity of people’s lives is hard to exaggerate. Most parents’ love for their children seems to be measured not by the amount of time they spend with them but by the value of the presents they buy for them at Christmas. I don’t mean to be patronising. Those 38 out of 40 transitioners who still fly are hardly in a position to throw the first stone. Although I was one of the two who has given it up, where would I be without my computer and my radio?

People aren’t stupid. When the talk turns to global warming they know that it means cutting down on the goodies. Some may believe that we can do the trick simply by switching to renewables and using energy more cleverly, without any drop in our level of material consumption. But in their heart of hearts I doubt that anyone’s really taken in by this. The threat of having what has become the very meaning of life taken away from us is clearly there behind the sweet talk. Whether we just have to give up a bit of it or all of it doesn’t really figure. The threat is vague because it’s so rarely talked about, and when a threat is vague people tend to assume the worst. Much better not to think about it at all. Pretend it’s not there and it may go away. Even if it doesn’t go away, not thinking about it saves the pain of having to face up to reality.

### **The Elephant in the Room**

I'm writing this in the run-up to the Copenhagen summit. For that summit to succeed two things will have to happen. Firstly, it will have to agree to a programme of action which will be strong enough to avoid runaway global warming. Secondly, that programme will have to be successfully implemented. There's not a snowball's chance in hell of either of these things happening.

The target which has been adopted by Britain, and now by the G8 countries as a whole, is an 80% cut by 2050. The Obama plan is to return to 1990 levels by 2020. These are the sort of targets which are under discussion at Copenhagen and there can be no shadow of doubt that they're inadequate. If achieved they would lead straight to runaway global warming. The chances of an adequate programme being adopted, say something on the lines of the Centre for Alternative Technology's *Zero Carbon Britain*, is nil.

What of the chances of even these modest target being met? It would require a 180<sup>0</sup> turn on the part of governments, civil servants, local councillors, journalists, science writers, teachers, industrialists and, above all, the people in general. All would have to start behaving in a way diametrically opposite to the way they behave now, against both our genetic programming and our ingrained cultural values. Just some people changing wouldn't do it. It's got to be virtually everyone. It ain't going to happen.

This is the elephant in the room. It's the one thing we permaculturists, transitioners and other people into sustainability never mention when we meet and talk. Books and articles on sustainability are equally careful to avoid it. We're all familiar with the kind of book which heaps woe on woe but ends with the obligatory 'happy chapter', which gives a brief sketch of the solutions and will somewhere contain the words, "Against all the odds, I'm cautiously optimistic." We go on working away in our various fields of sustainability, whether it be food, renewable energy, building, transport or whatever. We go on doing this because we believe it's the right thing to do and we love doing it. But all our work is based on the assumption that one way or another the world is going to go on. Somewhere at the back of our minds lurks the

possibility, even the probability, that it isn't. But we don't talk about it. We hardly even think about it.

Our culture places great store by optimism. It's generally taken to be a virtue, and pessimism a vice. No distinction is made between a true pessimist, who distorts the truth in order to make things seem worse than they are, and a realist, who may have to report that things really are bad. The real distinction is between optimists and pessimists on the one hand, who both distort the truth, and realists on the other, who try to portray it as it is. This cultural norm is often used as a way of denigrating people who speak up for sustainability: accuse someone of being a pessimist and you've scored a point over them. But the love of optimism runs deep and pervades the lovers of sustainability as much as anyone else. At the 2009 Transition Network conference I witnessed one of the participants declaring to the assembled company that he had given up his "apocalyptic" visions and now believed that climate change and peak oil were solvable problems. He was roundly applauded.

It's understandable that people who devote their energies to a cause want to believe that cause can succeed. But ignoring the possibility that it may not is blinkered vision. We accuse the mainstream of not having a plan B, a plan for what to do in case oil turns out not to be infinitely abundant and global warming actually is as important as the science tells us. But we could be accused of the same thing, of not having a plan B. If plan A is the sustainable future we would like to see, plan B is what we do in case we find ourselves at the end of the world.

### **So What?**

My reasons for writing this essay are two. Firstly, I have an inordinate love of the truth. What I've written here seems to me to be the plain truth and it irks me that we hide it and never talk about it. Secondly, I wonder if it makes any difference. If we sat down together and discussed what our plan B should be, how would it differ from our plan A?

Plan A is to avoid disaster, to develop sustainable systems and get them adopted soon enough and widely enough that we can avoid ecological catastrophe. Plan B can only be to make the time we have remaining to us on the planet as pleasant and wholesome as possible. This is

such new territory that I haven't even started to think deeply of its implications. Will the kind of systems we're trying to develop under plan A be just the ones that meet the aims of a plan B, or should we radically rethink our work? If there is a big difference then we're currently wasting a lot of effort. I would like to start some discussion on this and I would be grateful for feedback. Maybe this could be the germ of a useful discussion which, to my knowledge, the sustainability movement has never yet had.

On a personal level, coming to the conclusion I've presented in this essay hasn't had a noticeable effect on the way I live my life. Reducing my personal output of greenhouse gasses is something I do as a matter of course. It has become an ingrained part of my life and, if you'll forgive the metaphor, it takes a long time for the oil tanker to turn around. But why should I bother if the effort is futile? Well, for one reason it's not an effort. I like my way of life, travelling by train and bike, insulating the loft, buying local food and growing my own. For another, it seems to me to be ethically right. If I saw a group of men beating up an old lady to take her handbag I wouldn't say, "She's going to get beaten up anyway, so I might as well put the boot in myself and get a share of what she's got." I hope I'd try to do what I could to protect her.

It hasn't had an effect on me emotionally, either. Am I suppressing those feelings of grief which would seem appropriate in the circumstances? Maybe. But for a long time now I've lived with the knowledge that we're approaching a time of terrible suffering. Now I recognise it as a one-way trend rather than a crisis which will pass, but although this is a big jump intellectually it doesn't seem to make much difference emotionally. I can't say why that should be, I can only report that it is so.

And really why should it be a cause for grief? Is it a cause for grief when a person is old and approaching death? I'm past my sixtieth birthday and I've got my bus pass. I'm old. I'm going to die. OK, maybe it will be a decade or two, but I'm well past half way. Yes, there are things I used to be able to do which I can't do now. But I don't find this sad. It's just the way it is. We've all got to die some time, and so has the world, or at least the world as we know it.

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