

## Something nasty in the greenhouse

*James Lovelock*

In the late 1930s, when I was a student, we knew that war was imminent, but there was no clear idea of what to do about it. As a young man, I was naturally inclined to the Left in politics and followed the peaceful way, and thought that nothing could be worse than war; my views were shared by many, especially old soldiers, with awful memories of the First World War. Even those inclined to the Right said that Hitler was no danger; his natural enemy was Soviet Russia. This pacific dream world persisted until 1939 when suddenly the war became real.

I find a marked similarity between attitudes of over 60 years ago and those now towards Global Change. Most of us think that something unpleasant may soon happen, but we are as confused over what to do about it as we were in 1938.

Our response so far is similar to that in 1938, an attempt to appease. The Kyoto agreement is uncannily like that of Munich, with politicians out to show that they do respond but, in reality, are bidding for time. We are tribal animals, and the tribe does not act in unison until a real and present danger is perceived. This has not yet happened and, as individuals, we go our separate ways while the ineluctable forces of Gaia marshal against us. Battles will soon be joined and what we now face is far more deadly than any blitzkrieg. We are at war with the Earth itself.

Make no mistake, we will soon be faced with the greatest test humanity has ever had. Our chief scientist, Sir David King, was right when he said in the United States early last year that global warming is a greater threat than terrorism, but I think he did not go far enough. Global warming is the response of our outraged planet to the harm that we have already done, and the consequences for humanity are likely to be far worse than any war. The earth is now acknowledged by scientists to be a self-

regulating system made up from all its life forms, including humans and its material parts, the air, the oceans, and the surface rocks, and the Earth system regulates its climate and chemistry. Because the Earth is like a living system and is responsive to what we do, adding greenhouse gases to the air has quite different consequences from doing the same thing on a dead planet like Mars.

The laws of Gaia imply that any species that makes changes in the composition of the air and the nature of the land surface risks altering the world to a state that will disfavour its progeny. This is how the Earth System discourages harmful species and, in that sense we are Gaia's target now. But we are not just a pest on the planet to be eliminated; we are part of Gaia and its first consciously intelligent species. We are of great potential value, at the very least; we have held up a looking glass for the Earth and have let her see how beautiful she is compared with other planets.

We have not yet awakened to the seriousness of global warming, and, as in 1938, proposals for action are vague and ill considered. Some here and many in the United States deny the existence of global change and continue with business as usual and intend to enjoy a warmer twenty-first century while it lasts. Others recognise the threat but respond by taking the deep Green way; eat nothing but organic food, use nothing but renewable energy and raw materials, and use alternative not scientific medicine. If we follow either of these responses, it will allow Gaia eventually to return to her normal state of health but by eliminating the majority of humans and, probably, civilization as well. The liberal middle road where we acknowledge global warming but do little more than make cosmetic gestures like the Kyoto agreement, can only delay these consequences. We have to understand that already we have done so much damage to the Earth system that even if we immediately stopped burning fossil fuel, we still leave an impoverished Earth as the legacy for our descendants. Every day that we go on fouling the air and

taking natural ecosystems for farmland compounds the indebtedness.

Climatologists are concerned that there is a threshold level of carbon dioxide in the air beyond which the Earth system is committed to irreversible change; some see the threshold between 400 and 500 parts per million, a level that will soon be reached in this century unless drastic remedial action is taken. If there is a way to come to terms with Gaia and survive, it is to take the high-tech road. It would require us to embrace science and engineering not reject them; we need their skills and inventions to lessen our impact on the Earth. In the 1940s, we nearly starved on these islands and we were not saved by digging for victory but by the exquisitely crafted technology of radar that defeated the submarines. Now, once more we need the best technology. We need a portfolio of energy sources, with nuclear energy playing a major part, at least until fusion power becomes a practical option. If food can be synthesised by the chemical and biochemical industries from carbon dioxide, water and nitrogen, then let's make it and give Earth a rest. We must stop fretting over the minute statistical risks of cancer from chemicals or radiation. Almost a third of us will die of cancer anyway, mainly because we breathe the air laden with that all-pervasive carcinogen, oxygen.

If we fail to concentrate our minds on the real danger, which is global warming, we may die sooner, as did more than 20,000 in Europe during summer 2003. We have to take global change seriously immediately and then do our best to lessen the footprint of humans on Earth. Our goal should be the cessation of fossil fuel consumption as quickly as possible and there must be no more natural habitat destruction anywhere. To attempt to farm the whole Earth to feed people, even with organic farming, would make us like sailors who burnt timbers and rigging of their ship to keep warm. The natural ecosystems of the Earth are not just there for us to take as farmland; they are there to sustain the climate and chemistry of the planet.

To undo the harm that we have already

done requires a programme whose scale dwarfs the space and military programmes in cost and size. We need no more sustainable development, what we need is a well-planned sustainable retreat. Inevitably, we will make mistakes, especially when we are still so amazingly ignorant about the Earth system. Renewable energy sounds benign and is just what the Earth needs; but imagine that the extraction of power by wind turbines became a major energy source – would it be entirely free of larger consequences? I don't lose sleep over the thought that eddies shed by a single butterfly's wing might be the progenitor of a tornado that blew down my house but I do wonder whether a million giant wind turbines adversely affect the vorticity of the atmosphere.

I find it extraordinary that one safe and proven energy source that has minimal global consequences, nuclear power, is so readily rejected. It is now as reliable as any human engineering can be, and, according to a recent Swiss report, it has the best safety record of all large-scale energy sources. France has shown that it can become a major national source of energy, yet governments are still fearful of grasping this one

lifeline we can use immediately. We live at a time when emotions and feelings count more than truth and there is a vast ignorance of science. We have allowed fiction writers and Green lobbies to exploit the fear of nuclear energy, and of almost any new science, in the same way that the churches exploited the fear of hellfire not so long ago. We must be vigilant and make sure that the sensible remedial proposals we make at this meeting are not smothered by the dead hand of puritanical rejection.

We are like passengers on a large aircraft crossing the Atlantic Ocean who suddenly realise just how much carbon dioxide their plane is adding to the already overburdened air. It would hardly help if they asked the captain to turn off the engines and let the plane travel like a glider by wind power alone. We cannot turn off our energy-intensive fossil fuel-powered civilization without crashing, but we need something much more effective than the Kyoto agreement. My hope lies in that powerful force that takes over our lives when we sense that our tribe or nation is threatened from outside. In wartime, we accept without question the severest of rationing and will readily offer

our lives. Perhaps when the catastrophes of the intensifying greenhouse become frequent enough, we will pull together as a global unit with the self-restraint to stop burning fossil fuel and abusing the natural world.

Astronauts who have had the chance to look back at the Earth from space have seen what a stunningly beautiful planet it is; they often talk of the Earth being home. I am and have long been a Green and I ask all Greens to put aside their baseless fears and obsession with human rights alone; let us be brave enough to see that the real threat comes from the harm we do to the living Earth, of which we are a part and which is indeed our home.

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### Deep Depression Centred Fastnet

The barometric pens are plunging down	0600: fall 9mb in last 3 hours
Their grid-crossed charts, and tracing silent shouts	2/8 St, 8/8 Ns
Of storm-force gusts and whip-lashed rain to drown	continuous moderate rain
Last summer's meadows. The half-choked ditch spouts	0800: temp 9°C
Stinking mud; the gale-blown nervous sheep are pinned	s/wind: 140°/34 knots
To slowly shrinking islands. In town, weak	Ns base 250m
Slates soar like bats to ride the veering wind,	s/wind: 150°/36 knots
While curls of shredded cloud run by the peak	1000: 5/8 FraSt, 8/8 Ns
Like young computered demons. The forecast	occasional heavy rain
Spoke of deep cold arctic air - high anvilled	1215: surface cold front
Thunderclouds to push impatient spring past	5/8 Cumulonimbus
Fitzroy. So came the polar winds that shrilled	s/wind: 340°/40 knots
Through forest rides to sow new storms released	1400: temp 4°C
When deep depression 'G' moved east-north-east.	8/8 Cb, sleet showers

**Ivor Williams**  
Okehampton,  
Devon

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