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James Lovelock: The Earth is about to catch a morbid fever that may last as long as 100,000 years

Each nation must find the best use of its resources to sustain civilisation for as long as they can

Published: 16 January 2006

Imagine a young policewoman delighted in the fulfilment of her vocation; then imagine her having to tell a family whose child had strayed that he had been found dead, murdered in a nearby wood. Or think of a young physician newly appointed who has to tell you that the biopsy revealed invasion by an aggressive metastasising tumour. Doctors and the police know that many accept the simple awful truth with dignity but others try in vain to deny it.

Whatever the response, the bringers of such bad news rarely become hardened to their task and some dread it. We have relieved judges of the awesome responsibility of passing the death sentence, but at least they had some comfort from its frequent moral justification. Physicians and the police have no escape from their duty.

This article is the most difficult I have written and for the same reasons. My Gaia theory sees the Earth behaving as if it were alive, and clearly anything alive can enjoy good health, or suffer disease. Gaia has made me a planetary physician and I take my profession seriously, and now I, too, have to bring bad news.

The climate centres around the world, which are the equivalent of the pathology lab of a hospital, have reported the Earth's physical condition, and the climate specialists see it as seriously ill, and soon to pass into a morbid fever that may last as long as 100,000 years. I have to tell you, as members of the Earth's family and an intimate part of it, that you and especially civilisation are in grave danger.

Our planet has kept itself healthy and fit for life, just like an animal does, for most of the more than three billion years of its existence. It was ill luck that we started polluting at a time when the sun is too hot for comfort. We have given Gaia a fever and soon her condition will worsen to a state like a coma. She has been there before and recovered, but it took more than 100,000 years. We are responsible and will suffer the consequences: as the century progresses, the temperature will rise 8 degrees centigrade in temperate regions and 5 degrees in the tropics.

Much of the tropical land mass will become scrub and desert, and will no longer serve for regulation; this adds to the 40 per cent of the Earth's surface we have depleted to feed ourselves.

Curiously, aerosol pollution of the northern hemisphere reduces global warming by reflecting sunlight back to space. This "global dimming" is transient and could disappear in a few days like the smoke that it is, leaving us fully exposed to the heat of the global greenhouse. We are in a fool's climate, accidentally kept cool by smoke, and before this century is over billions of us will die and the few breeding pairs of people that survive will be in the Arctic where the climate remains tolerable.

By failing to see that the Earth regulates its climate and composition, we have blundered into trying to do it ourselves, acting as if we were in charge. By doing this, we condemn ourselves to the worst form of slavery. If we chose to be the stewards of the Earth, then we are responsible for keeping the atmosphere, the ocean and the land surface right for life. A task we would soon find impossible - and something before we treated Gaia so badly, she had freely done for us.

To understand how impossible it is, think about how you would regulate your own temperature or the composition of your blood. Those with failing kidneys know the never-ending daily difficulty of adjusting water, salt and protein intake. The technological fix of dialysis helps, but is no replacement for living healthy kidneys.

My new book The Revenge of Gaia expands these thoughts, but you still may ask why science took so long to recognise the true nature of the Earth. I think it is because Darwin's vision was so good and clear that it has taken until now to digest it. In his time, little was known about the chemistry of the atmosphere and oceans, and there would have been little reason for him to wonder if organisms changed their environment as well as adapting to it.

Had it been known then that life and the environment are closely coupled, Darwin would have seen that evolution involved not just the organisms, but the whole planetary surface. We might then have looked upon the Earth as if it were alive, and known that we cannot pollute the air or use the Earth's skin - its forest and ocean ecosystems - as a mere source of products to feed ourselves and furnish our homes. We would have felt instinctively that those ecosystems must be left untouched because they were part of the living Earth.

So what should we do? First, we have to keep in mind the awesome pace of change and realise how little time is left to act; and then each

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community and nation must find the best use of the resources they have to sustain civilisation for as long as they can. Civilisation is energy-intensive and we cannot turn it off without crashing, so we need the security of a powered descent. On these British Isles, we are used to thinking of all humanity and not just ourselves; environmental change is global, but we have to deal with the consequences here in the UK.

Unfortunately our nation is now so urbanised as to be like a large city and we have only a small acreage of agriculture and forestry. We are dependent on the trading world for sustenance; climate change will deny us regular supplies of food and fuel from overseas.

We could grow enough to feed ourselves on the diet of the Second World War, but the notion that there is land to spare to grow biofuels, or be the site of wind farms, is ludicrous. We will do our best to survive, but sadly I cannot see the United States or the emerging economies of China and India cutting back in time, and they are the main source of emissions. The worst will happen and survivors will have to adapt to a hell of a climate.

Perhaps the saddest thing is that Gaia will lose as much or more than we do. Not only will wildlife and whole ecosystems go extinct, but in human civilisation the planet has a precious resource. We are not merely a disease; we are, through our intelligence and communication, the nervous system of the planet. Through us, Gaia has seen herself from space, and begins to know her place in the universe.

We should be the heart and mind of the Earth, not its malady. So let us be brave and cease thinking of human needs and rights alone, and see that we have harmed the living Earth and need to make our peace with Gaia. We must do it while we are still strong enough to negotiate, and not a broken rabble led by brutal war lords. Most of all, we should remember that we are a part of it, and it is indeed our home.

The writer is an independent environmental scientist and Fellow of the Royal Society. 'The Revenge of Gaia' is published by Penguin on 2 February

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