

## Edge Debate No. 19 "Tipping Points"

The invitation to this meeting introduces the idea of geometrical progression, and gives some examples.

An atomic bomb works on the principal of geometric progression. So long as every fission of one uranium atom leads to the fission of more than one other then an atomic explosion is inevitable. A slow initial growth increasing geometrically leads to growth at an infinitely fast rate called an explosion. Graphs of this are very misleading because a shift of scale easily turns the slow rate of growth to the infinite one. In fact every explosion reaches an end when the geometric rate of growth stops and changes to a decline. Atomic bombs do not explode for a very long time.

Malthus painted a very grim picture of the world future based on an explosive geometric growth forecast for the world population. We now take a more optimistic view and anticipate that the population will stabilise at around 10 billion people. Is this a manageable figure compared to the current figure of 6 billion?

The use of fossil fuels is currently modelled as a geometric progression, and we had better make sure that we control it before an explosion destroys our global society. This meeting is a part of our attempt to control that growth.

Of course the use of fossil fuels cannot develop to infinity. Something to change the rate of growth is bound to occur.

The fossil fuels may become exhausted. My banker friend says that the market shows no signs of fossil fuel scarcity. If the market thinks that the resource is infinite then I am inclined to distrust the market makers.

The carbon dioxide the fossil fuels become may render the air unfit to breathe. This is pretty likely. Current guidance on the CO<sub>2</sub> content of the air in rooms sets 1000 parts per million as the control point. If all the fossil fuel carbon is consumed and converted to carbon dioxide then the carbon dioxide content of the atmosphere will exceed the WHO guidance figure of 5000 ppm for long term (let alone a lifetime) exposure.

I think I have said enough about the geometric approach to unsustainability. It is clearly all hot air and I make no apology for that. I have recently been replaced from moving the highest strata of institutional and government policy debate.

From a news release from the Department of Food and Rural Affairs I learn that 21 people are going to deliver better environmentally friendlier buildings. ( I hope you like the use of English). This group of people have been given an itemised list of tasks and I hope you will not be surprised to learn that not one of them actually includes anything remotely connected with making a building. Nor that any of the individuals listed have been concerned with the latest revision to the building regulations. The list looks like a list of cronies. I am not on there.

I hope their report will be well worked out even if that makes it workable.

A simpler method of applying the regulations to existing buildings is to insist that they are applied every time a building is sold. This was suggested at several part L workshops. The influence on the market for buildings needs to be understood and allowed to evolve. Does the idea apply only to freeholds? If so the sale of leaseholds would quickly come to predominate and the aim would be frustrated. Extend the idea to leasehold. What length of leasehold? Do we need a rental market? When does a weekly rental become a weekly lease hold? Questions of this kind have to be answered. They are not pedantic and have a philosophic underpinning if only we could understand it.

The target is to reduce the demand for carbon emission by a factor of 10 in the next 20 or so years. The current average time for occupation of a house is about 8 years. So half of the houses would be improved in 8 years and  $\frac{3}{4}$  in 16 years. This is on target. However the cost is about £400/sqm or 20% of the cost of a house to be added at every sale. It is rather like ruthless dilapidations at the end of a lease. Already companies owning leases are very bad at building up a sinking fund to pay for the costs of terminating a lease. Every building owner needs to be building up such a sinking fund. It could be made part of the conditions of a mortgage. Endowment insurance could build up such a sinking fund. That would help the insurance industry recover from its current bad press and Gordon Browns attacks.

Bringing buildings up to standard should be part of the economic climate of living in a house 20% in 8 years is about 3% per year

There used to be a tax on the benefit, which accrued from owning a building. If you owned a building you did not have to pay tax on the money you used for rent, but if you paid rent for your home it had to be paid out of taxed income. So by owning a mortgage free home you had a benefit equivalent to its rent and paid tax. This is socially just. Even in the US it is applied. Maintenance carried out reduces the rent so it is tax allowable. If payments to improve or maintain buildings were tax allowable then receipts would have to be presented and the black economy would be discouraged. A tax of this kind could build up government balances, which could be dispersed as grants to encourage energy improvements.

Nitty gritty problems like this need hard detailed work to develop them and can easily be dismissed as unworkable.

How much easier to announce the appointment of prestigious individuals who are not in touch with the problem and then to produce some general ideas and blame the institutions for their failure to understand or implement them.

**Max Fordham**

Dec 1 2003