

## ENVIRONMENTAL ECONOMICS: Introduction 2001

This course is not a conventional course of economics. It is rather a course of dismal science. It concerns the tendency of mankind to despoil the environment in a manner that seems bound to lead, sooner rather than later, to disaster on a large scale.

We shall call upon the wisdom of environmental scientists to explain and to analyse the nature of these depredations; and we are going to invoke some results in economic theory in order to identify the incentives that encourage man's dysfunctional behaviour.

Conventional courses in environmental economics often have the objective of factoring into the framework of neo-classical economics some of the hidden or unrecorded costs of economic activity, with a view to refining the system of social and economic accounting.

Such a course would take the notion of market failure as its leitmotif (i.e. its leading idea), and it would talk of economic externalities and of the shadow prices upon which the reformed accounting would depend. It is likely that it would concentrate on the techniques of cost-benefit analysis. We shall also touch on these ideas, albeit rather briefly and in a somewhat disparaging way.

Economists have, from time to time, issued dire warnings about the state of the world; and the most famous pronouncements of doom by any economist are surely those of the Reverent Thomas Malthus.

Malthus published his *Essay on Population* in 1798, a little more than 200 years ago, at a time when the processes of urbanisation and industrialisation were beginning to transform the environments of this county. His prognosis was that the unbridled procreation of the labouring classes must lead them inevitably to misery, vice and disease. Since there was no escape from these afflictions, any attempts at improving the conditions of the urban and the rural poor in Britain were pointless, in his opinion.

Indeed, Malthus proposed that attempts to relieve the poverty of the labouring classes were bound, eventually, to worsen their condition, since it would encourage the excesses of procreation which were the root cause of their misery. Malthus's doctrine was a paradigm of economic nihilism and it has been widely spurned on that account.

In the light of the experience of the following 200 years of European and North American industrial development, it is clear that Malthus was quite wrong in his predictions. However, if we see human history in a longer perspective, or if we examine the circumstances in which the vast majority of the world's population is constrained to live, then we are likely to become less confident in refuting the Malthusian doctrines. We shall be looking closely at what Malthus wrote and we shall try to assess its relevance to the modern world.

We shall spend some time in discussing the history of population growth in different societies at different periods; and we shall be startled by the facts and figures of the world-wide population explosion that is now underway. I shall argue that the roots of this population explosion lie in the very remote past at the time of the inception of our species. That is to say, I shall propose that it is in our very nature to procreate at a rate that far exceeds what is appropriate to our modern ways of living.

It must be true to say that everywhere and at all times in the history of urban and agrarian society, human fertility has needed to be constrained by social controls. Social controls are often insufficient adequately to constrain this aspect of human nature. Also, the desires and objectives of individuals are often at odds with a wider social rationality.

An interesting question is why the afflictions of disease and starvation, that might have been expected to cull the growing urban populations of the Industrial Revolution, were held in abeyance for a crucial period until modern improvements in sanitation, hygiene and medicine provided security for the enlarged population. We shall have to look in strange places to find the explanation.

Disease has not been defeated in the modern world; and many of the ills that seemed, only a generation ago, to be succumbing rapidly to advances in medical science are nowadays threatening a rampant revival. We live in a world of rapidly emerging new diseases; and the antibiotics which have been our recourse against bacterial infection over the last 50 years are losing their efficacy. We ought to learn some of the medical and scientific details.

The converse of Malthusian nihilism is the typical optimism of neo-classical economics which proposes that, left to its own devices and freed from for the malign or misguided interventions of governments, the economic system is a self-regulating entity that will produce an outcome in which the greatest possible benefit is derived by the greatest number of people.

This optimistic idea can be described as the Panglossian doctrine. The description is an allusion to Voltaire's satire *Candide*, published in 1759, in which the character of Dr. Pangloss is portrayed. Dr. Pangloss was liable to irritate his listeners with the frequent pronouncement that all is for the best in the best of all possible worlds. In hearing of Dr. Pangloss, you might think of Adam Smith; but, in fact, Voltaire's writings predate Smith's whose *The Wealth of Nations* was published in 1776. (Voltaire 1694-1778, Smith 1723-90)

The truth is that the notion of a self-regulating social order was one of the leading ideas of the European enlightenment; and many thinkers shared it. In some ways, it is simply a secularised version of the mediaeval notion that society is ordered so as to fulfil a divine purpose; but from Smith's day onward it has been a cornerstone of the vernacular philosophy of businessmen.

The doctrines of Dr. Malthus and Dr. Pangloss are really the mirror images of each other in that they both justify a fainant attitude of non-intervention. Either it is pointless to attempt to improve upon the social and economic conditions in which we live, because such attempts are self frustrating, or else it is pointless because we already live in the best of all possible worlds. An added contention is that the economy would attain an ideal state if it were not for the meddlesome interventions of the agents of government which frustrate the workings of Adam Smith's hidden hand.

This idea of a self-regulating economy is, of course, very much alive in modern economics, particularly in environmental economics where the issue is debated of how far the government should intervene to regulate noxious industrial, commercial and agricultural activities that tax the environment.

As might be expected, the economists tend to ally themselves with the proponents of non-intervention. Indeed, they have awarded a Nobel Prize to Ronald Coase who is famous for his Panglossian assertions concerning the optimality of unregulated economic activity. Coase has argued that the market alone should be relied upon to redress the effects of harmful economic externalities. We shall be looking at the theorem of Coase in some detail towards the end of the course.

I was educated to believe that economics is an objective science, or that it was rapidly becoming one. I think that you may have been persuaded of the same viewpoint. It took me some time to recognise what is surely obvious: Economics is also an ideology. By saying this I don't mean to be derogatory. However, if you bear the point in mind, then certain consequences will surely present themselves to you.

An ideology is intended to simplify your view of the world. It gives you the intellectual ease of knowing which are the important issues and which are the ones that can be ignored or left to the specialists. It is part of the ideology of economics to suggest that the commercial and pecuniary aspects of life are the important ones. Matters of science, technology, and even detailed issues of social organisation, can all be relied upon to look after themselves, provided that they are embedded in the appropriate economic framework.

That is a view that I would to try to convince you to reject very strongly. It matters greatly that we should know the salient scientific facts of the major modern environmental problems.

We shall be making reference during the course to the following sciences:

*Ecology, Demography, Agronomy, Geology, Meteorology,  
Epidemiology, Bacteriology, Virology, Nuclear Engineering.*

I am sure that there is much else besides that I should mention. I don't mean to imply that you will have to steep yourselves in all of these topics. All that you need

to do is to learn to spell their names and to pay them due respect—and, if you do that, then you will be distinguishing yourselves from the majority of economists.

Many of the topics come wrapped in news stories; and you should keep a sharp lookout for relevant items in the news. I should mention three recent events that connect to some topics of the course.

The first event has been the breakdown of the Hague summit conference, which was aimed at achieving international agreement on targets for limiting or reducing emissions of carbon dioxide gas. The negotiations were being held to find ways of implementing the Kyoto agreement on reducing industrial emissions and to halt the global warming which is already causing sea level rises and climate changes.

Discussions broke down when some of the European delegates, notably the Germans and the French, rejected a deal, brokered by John Prescott, whereby the U.S, who are the world's largest carbon-dioxide polluter, would be allowed a smaller cut in domestic emissions. Rather than reduce their emissions, the Americans were seeking ways of gaining credit for creating carbon sinks by planting trees on their own territory and on foreign territories. They were also seeking credit for helping others to reduce their emissions.

What is also at issue here is an idea of transferable pollution permits which, if acquired in sufficient number, would allow the U.S to act without restraint. The idea of transferable permits was originated, of course, by the economists, who have given proofs of its economic optimality.

If the world is to reduce its emissions of carbon dioxide without reducing its consumption of energy, then some alternative non-carbon energy source must be found. In my own estimation, the only adequate source of energy, which is of sufficient magnitude, is nuclear energy. But nuclear energy is beset by all sorts of environmental hazards of its own; and there is widespread popular resistance to it.

At present, a major diplomatic incident is threatened which centres on a container ship that has left the French port of Cherbourg and is sailing around Cape Horn and the southern extremity of South America. The ship contains a cargo of vitrified nuclear waste, which is being returned to Japan from where the original unprocessed waste came. The owner of the ship is *British Nuclear Fuel*, and those who object to its passage around the cape include Chile, Peru, Ecuador, Colombia, Brazil and Uruguay. We ought to keep our eyes on this story and on other events affecting the British nuclear industry.

Finally, your attention may have been caught by recent reports concerning a sizeable reduction in the EU fishing quota. The common opinion of the fisheries experts is that the quota system has never been stringent enough throughout its entire history. Now it seems that the quota levels for some fish are quite academic, since there are no such fish to be found. In particular, the cod stocks have collapsed in

the North Sea. We shall be analysing the problems of open-access fisheries in some detail in this course.

Notwithstanding this news story, you may tell me that that you have had no difficulty in finding cod and chips in a local shop, and you might well wonder where the fish is coming from, as I have been wondering. The truth seems to be that it still comes from Iceland in fairly abundant quantities.

In the early seventies, a war was threatened between Britain and Iceland when the latter extended its jurisdiction over its territorial waters beyond the internationally agreed limits. It sought to exclude British trawlers from these waters. Eventually, Iceland did succeed in establishing control over the waters, and it has been pursuing an active policy of conserving fish stocks ever since.

The moral of the story is evident. Moreover, it seems extraordinary that the EU has allowed the fish stocks in the North Sea to collapse when the experience of the irrecoverable collapse of the Newfoundland fisheries some years ago has provided clear warnings.

The course is about these issues and many others; and it is surely the duty of all of us to learn about the mounting environmental hazards that are nowadays affecting the world increasingly.

D.S.G. Pollock, 14th January 2001