

Correspondence with Nathan Keyfitz and Thoughts Engendered by his Recent Paper on Demographic Discord.

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The Author is a past Director General of the Geological Survey of Canada and past President of the Royal Society of Canada. Nathan Keyfitz has agreed to the publication of this paper, although it should not be assumed that he necessarily agrees with all its comments and conclusions.

Letter from Keyfitz to McLaren, August 1994:

"You may be interested in a piece that will be published in *The Sciences*, Journal of the New York Academy of Science, in which I try to guess what the issues will be at the forthcoming meeting in Cairo. (Now published as *Demographic Discord*, vol.34, no.3, 21-27). You will see that I continue to harp on the way that different disciplines come up with different results – with much damage to the influence of science on policy. Apparently scholars who have ambitions to exercise influence cannot bear to disclose the assumptions that underlie and limit the application of their conclusions. My ambition has been to elicit these from them, in the hope that this will lead to interdisciplinary understanding. Slim hope.

"As I read your piece in the June 1993 issue of *ECODECISION*. I am impressed with its boldness. Given the obvious seriousness of the population question, you and Ehrlich and E.O.Wilson and others seem to be saying, we must not hold up any effort that we can make to help people control their births. However great our effort there will still be far more people than the planetary ecology can comfortably support. Maybe I should follow your example and be bolder."

Reply, McLaren to Keyfitz in the form of a discussion on selected passages from *The Sciences* paper.

DMcL I was very pleased to receive your good letter enclosing your manuscript for *The Sciences* prepared in advance of the Cairo Conference. I found your paper most interesting. Once again you and I, in approaching problems from differing points of view, seem to have come to similar conclusions. I'd like to make some comments on your paper.

NK *"What seem to be purely demographic matters - population growth and migration among*

countries – have greatly affected internal politics in the countries of Europe. The issue has radically changed the European political landscape, as parties of the extreme right have gained a sizeable proportion of the electorate in France, Austria and elsewhere on anti-foreigner platforms. As the extreme right parties have increased their appeal, the moderate right has had to shift its ground in their direction to compete".

DMcL You introduce the political effect which has developed in Europe into a stand-off between the right and the more leftist or liberal approaches, even in demographic matters. Although separate from the other stand-off of economists and biologists, the two are, nevertheless, similar, and so are their supporters.

NK The paper discusses the differing approaches taken by physiologists who would suggest that *"sending food to relieve hunger in over populated areas is only producing a larger proportion that will be even hungrier"*, whereas demographers would *"use instruments that are the opposite of hunger and disease to control population"*, and suggest that *"better nutrition is associated with education and other features that more than offset its physiological effect on childbearing. The difference between countries is matched by difference between disciplines: biology and economics"*.

DMcL Demography should be separated out because at any point in time the numbers are factual and objective, regardless of argument about transition or causation. Furthermore projections forward in time, based on current rates, are useful, although not necessarily correct. Biologists are only a part of a large number of informed individuals including ecologists, and many geologists, geographers, chemists.

atmospheric scientists and oceanographers, as well as an increasing number of informed people (including Albert Gore!), who question the assumptions that lie behind the current economic system, and they include a small but growing number of economists.

NK *"How is it possible that scholars – physiologists and demographers, biologists and economists – can maintain over time such different ways of approaching the same questions? Yet biologists and economists who eat in the same faculty club do not seem to communicate very effectively".*

DMcL The reason for the stand-off is that the two disciplines are in different worlds. The economist knows nothing of life and the complexity of the natural world we live in, and this includes all the natural sciences. He knows nothing, even, of the natural resources he attempts to include in models based on axioms that have never been justified in a real world. His models are deductive and imaginary.

NK *"Paul and Anne Ehrlich of Stanford and Donella and Dennis Meadows of Dartmouth and MIT say the world is in trouble right now the final phase of the disintegration of the ecosphere is upon us. At the other extreme, the economist Julian Simon of the University of Maryland argues that the foreseeable future is safe: the biologists are just trying to scare us. What counts is that people are protected by the laws of economics and the power of science against any possible shortage of the things they live on and enjoy".*

DMcL The comments by Julian Simon on the laws of economics remind one of the old adage that the world is made up for the most part of fools and knaves. Two examples will suffice. **Substitution:** we will never run out, the market will regulate scarcity, and technology will find new materials when the old are exhausted. This is such an irresponsible belief that I am at a loss to know how it could have arisen. All living systems, including ourselves, depend on certain commodities none of which are substitutable, e.g. sunlight, air, water, soil, and all the major and minor chemicals that are essential for life, as well as many of the natural fertilisers, including phosphorous. **Sustainability** is also invoked to deal with the problem of accelerating waste production and disposal. Here-recycling

comes to the rescue. in spite of the fact that waste means increase in entropy. Reusable metals and some other materials constitute a small proportion of the current flood of wastes, and require additional energy and processing.

NK *"Economists maintain that scientists, impelled by the inducements of free markets, have again and again come up with new technologies; science has always met shortages by finding substitutes for material in short supply. The evidence of the past, economists argue, suggests that future shortages will be dealt with in the same effective way".*

DMcL This is a good summary of why economists are optimistic, and also the reason why biologists (and many others) are pessimistic. It must be understood that between the two THERE IS NO COMMON LANGUAGE.

NK *"I once asked the Harvard economist Robert Dorfman whether he could name half a dozen principles that underlay the subject of economics. He responded with the following six:*

- (1) Always think in alternatives; if there is no alternative there is no economic problem.*
- (2) Look for the trade-offs. If one wants to protect the environment, what does one have to give up?*
- (3) The question is never whether to do something or not, but always how much of it to do – if anything at all.*
- (4) Practically nothing is indispensable; there is a substitute for almost everything, even if it is not quite as satisfactory as the first choice.*
- (5) Never forget that every transaction is two sided: every purchase is a sale, and vice versa.*
- (6) Analyse every situation as a game in which each participant responds to the actions of the others in a way most favourable to himself; the other participants take that into account and so on ad infinitum".*

Keyfitz points out that *"biology does not work the same way, there is no unifying set of axioms..... Biologists say that their science is empirical, and they contrast it with economics, which they think of as a priori..... Underlying*

many disparities between biology and economics are fundamental matters of scale".

DMcL Further comments on Dorfman's 6 principles are offered:

- (1) This suggests that the extinction of animals and plants, or the destruction of the world's forests, do not constitute an economic problem.
- (2) This is not a rational statement. One cannot trade off an absolute. For instance what does one give up to protect one's blood supply, or even drinking water? They are invaluable because without them we cease to exist. The statement illustrates the impossibility of usefully attempting to apply an axiomatic man-made system of thought to the immensely complex global ecosystem which we live within, do not understand, cannot control and which we are damaging catastrophically.
- (3) No comment.
- (4) This is the mega-fallacy – none of the ingredients of the life support system can be given up, (and see earlier remarks on substitutability).
- (5) How does living on capital fit this? We are rapidly using up the natural endowment of materials and energy – a one-way increase in entropy.
- (6) The expression *ad infinitum* is unfortunate in view of the finite nature of all earth resources. The statement is a clear admission that our economic system serves no social or moral purpose, and this is why I am terrified.

Conclusion

I have probably over-stated my case, but I have been stimulated, as always by your writings. Your letter refers to my boldness, although I argue my case with much less skill than you do. It seems to me, nevertheless, that although you explain the controversies in such a manner that the reader suspects that you favour one side over the other, yet you avoid positive statements in support of either. You came very close to it in your review paper in the *Proc. Nat. Acad.* "Are there ecological limits...". Ken Hare rang me up when he got this and considered it the best attack on the classical economists yet. It is

indeed a most able summary, although you still adopt an impartial mode. In fact you make the orthodox brethren look foolish, but does everyone see it that way? As you will see from my remarks above, I believe it is time we attacked, because their doctrine is dangerous and causing much harm. Their arguments are spurious because their axioms are spurious, and they wield a grossly disproportionate influence.

G.M. Young, the great historian of the Victorian age, said "A man has no more right to an opinion for which he cannot account than he has to a pint of beer for which he cannot pay". The economist, if one follows this maxim, has no right to an opinion on, for instance, the structure of the ecosphere, the availability of natural resources, the problems caused by pollution arising from use of fossil fuels and their limits, and many others. This is because he has had no training in any of the sciences that describe the complex mechanisms that control the ever-changing surface of the planet, the home of countless organisms in delicate and dynamic equilibrium, and of the human species and its influence on this system. The economic sub-system is entirely man-made and self-sufficient internally. Its laws are derived deductively from axioms that go back to Adam Smith, but with the moral purpose removed. It assumes a continuing supply of energy and materials, together with continued technological advance. So-called environmental problems will be dealt with, because technology will develop more rapidly than changes in the environment. Waste will be dealt with by using less materials and recycling.

The assumptions made by their system are staggering, and a confirmation that its supporters are blissfully unaware that our existence is dependent on a deeply complex life system that exists on the face of the Earth, in balance with the equally complex and unstable substructure of the planetary crust. We find that this system is being damaged on a scale approaching some of the rare events during the geological past that resulted in massive killings of life forms with recovery rates measurable in hundreds of thousands of years.

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