

The cost of surrogacy

SIR — Whether I am “a controversial figure”, as Declan Butler says (*Nature* 361, 102; 1993), I don't know, but I did not “[create] an agency for surrogate mothers”.

As I have stated in several scientific papers and also in my book *Mères Porteuses, Oui ou Non?* (Frison-Roche, Paris, 1990), I set up a not-for-profit organization called Alma Mater whose aim was to manage the financial costs raised by surrogacy for those concerned. So far as I am aware, this organization is unique, although it resembles those involved in the adoption of children and indeed was recommended later in a leading article in *Nature* (320, 95; 1986). Should we be blamed for having pioneered an approach advocated by *Nature*?

As far as the CNRS group is concerned, our sperm bank, thanks to which this work was made possible, was indeed a “private” bank, but once again was not for profit. Contrary to allegations made in *L'Express*, we followed the correct procedures insofar as the law allowed us to do so. It is true that parents' consent was not *totally* informed, but this was to ensure the utmost protection to those concerned. As Butler points out, the present state of the law is unsatisfactory for researchers, who should be able to have access to medical data without breaking the law, and also for parents, who must be protected. “Disobedience may be a duty”, said General Charles de Gaulle when he flew to London after the fall of France in 1939. That may also be the case for us.

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Failing forecasts

SIR — According to your leading article (*Nature* 361, 191; 1993), economists cannot be blamed for the forecasting failures that result from their models. After all, they have to make guesses about the behaviour of people and government.

In fact, their guesses are not random. They are based on assumptions that are psychologically implausible. Most prominent among these is the doctrine of Rational Expectations¹. According to this view, the expectations on which people base their behaviour are formed by making optimal use of available information. When dealing with noise-free systems, they have perfect foresight; when dealing with noisy ones, their forecasts cannot be bettered. Econometric

models are based on this assumption². For the deputy governor designate of the Bank of England, its adoption represents the most significant recent development in macroeconomics³. What is so ironic is that the models that produce such clearly suboptimal forecasts are based on the assumption that people make optimal forecasts.

The assumption that people are substantively rational was not made by Keynes but by economists who succeeded him. For many years, experimental psychologists have demonstrated that it is unreasonable⁴. Reconsideration of Keynes's ideas may have been forced on us by the need find ways to deal with the recession. However, it may also signal a growing impatience among economists with unrealistic assumptions about the rationality of human behaviour⁵.

However good the assumptions, inadequate datasets will always lead to forecasts that are prone to error. The reason that economic forecasters appear to promise too much is that their predictions are presented in the media as deterministic. No quantitative estimates of the levels of uncertainty associated with them are provided. In contrast, weather forecasts are increasingly presented probabilistically by well-calibrated meteorologists⁶. It rains on 70 per cent of the occasions on which forecasters say that there is a 70 per cent chance of rain. Given this, the public is not inclined to ridicule them on the 30 per cent of occasions that this forecast is given but it does not rain. They have not promised too much. Perhaps economic forecasters could learn from their example.

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Global warming

SIR — It is accepted that the burning of tropical rain forests can be a significant contributor to an increase in global atmospheric carbon dioxide, with consequent implications for potential global warming. Obviously the most immediate and direct way to reduce net forest-related carbon dioxide emissions is to work to restrict global forest burning, particularly in rain forests. However,

planting new trees can also improve the net balance of carbon dioxide.

Carbon sequestration potential varies by species, but average carbon storage for mature woodland in Britain is about 60 tonnes per hectare¹. A recent but conservative estimated world damage value per tonne of carbon is \$10 (ref. 2). This suggests an eventual economic value of \$600 per hectare of mature woodland in prevented global warming damage.

This year's European Communities (EC) agreement requiring farmers to set aside 15 per cent of their land in order to be eligible for EC support prices offers an economically favourable opportunity for carbon sequestration. But the agreement unfortunately specifies that the land set aside must be rotated back into agricultural production every subsequent year; this makes afforestation impossible as a set-aside option. Even worse, British farmers currently participating in the earlier 1988 national set-aside scheme, where afforestation was permitted and encouraged under the Ministry of Agriculture's “Woodland Option”, were informed in September that this land could not be counted towards their new 15 per cent set-aside requirement. The current incentive is to withdraw from the 1988 scheme and to tear out previous tree plantings in order to comply with the new regime's rotational requirement.

European set-aside, as it is now conceived, contributes little to nature conservation or environmental protection. If we look on set-aside as an opportunity to do more than just reduce agricultural production, we may wish to allow and encourage afforestation. More radically, we could in some cases allow succession to take its course on set-aside land. Such a policy has produced extensive areas of secondary woodland in the United States, but in Britain we seem to have largely forgotten that tree planting is often unnecessary to produce woodland succession³. Imaginative set-aside could, as well as reducing agricultural surpluses, offer us a nature conservation and carbon sequestration bonus.

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