THE LIMITS OF MAINSTREAM ECONOMICS

FROM EPISTEMICS TO SCENARIOS: Linking Uncertainty to Business Planning for an Uncertain Future

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Introduction

I am drawing on forty years' experience of applying economic ideas to what we might call real world problems – in business organisations, a major multinational oil company, a global energy organisation, in relation to energy policy for various intergovernmental organisations, and in scenario development and application seeking to cope with future uncertainties on behalf of various institutions – the need to face up to uncertainty and recognise the limits of our knowledge has been ever present. Yet the need to analyse possibilities, and prepare for surprises and effective responses to them, has been an on-going responsibility. Here in particular, I will refer particularly to the ideas and works of the late Professors John Jewkes and George Shackle, with both of whom I worked and corresponded, and whose views have proved a good fit.

For heterodox economics rather than the neoclassical approach these ideas illuminate thinking about future possibilities, not least by drawing on historical experience and how things work in 'the real world'. Their value in producing scenarios cannot be gainsaid. The value of developing and applying the multiple scenario approach is in turn one to which I strongly adhere. But in such work there is little or no place for perfect knowledge or 'perfect' competition, little evidence of general equilibrium over time, often not a clear match between supply and demand. And the mathematics of simultaneous equations and modelling are often a cul-de-sac rather than a reliable guide to sound policy or a better future.

From Academic Theorising to the Reality of Uncertainty

Over forty years ago, in "Portrait of a University", a special issue of a now defunct magazine, I was asked to provide a piece on the approach to economics as a discipline and the teaching thereof at the University as I had experienced it. My recollections were based on what is now over fifty years ago. The second paragraph of the piece proceeded as follows:

> "My recollection of the teaching of the principles of economics in Oxford is of a Praelector in economics engaged in convolutions about a board strewn with graphs and equations. I, unversed in such scientific mysteries (my eyes have been somewhat opened since) and sceptical as to their practical value (largely confirmed by subsequent experience), looked on with dull incomprehension. With fair regularity, these exercises would begin with my asking what the stated and implied assumptions in the model were, and was it not the case that these removed the model far from the real world. With scarcely a halt, and never a considered reply, we proceeded up into the higher stratosphere of theoretical economics." [1]

When I next met the Lecturer concerned he was, as always, very polite although he did mention he had seen and read the article. By that time I had become the chief economist of the

Royal Dutch/ Shell Group. Little did I know that David Stout – for it was he – was shortly thereafter to begin his second stint as Economics Director of the National Development Office and sever his connection with our old College. Nor did I know he was to become, for ten years from 1982, Head of the Economics Department at Unilever.

It was only long afterwards that I became aware that David had been closely involved in the study of industrial economics at Oxford from the early 1960s. This study had begun in the late 1940s and was spurred by the creation of the “Journal of Industrial Economics” in 1952 by Philip Andrews. Between 1952 and 1968 there was also a weekly graduate seminar on the Economics of Industry for graduates. We know this in part because the archives of these seminars were handed over by Professor David Stout to Lisa Arena on 16th February, 2006. [2]

It was unfortunate that invitations to these seminars were not extended to interested undergraduates, for attendance does not seem to have extended to more than twelve graduate students plus senior members. Within a few weeks of leaving Oxford I was enthralled as I started to attend the weekly Business Seminars run by Sir Ronald Edwards and Harry Townsend at the London School of Economics, where senior business people provided and discussed case studies. I should also add that the idea, suggested in the title of the Workshop contributed to by Lisa Arena, that the history of economics has much in common with the history of science is grossly misleading. Too many economists have sought to rank themselves alongside the natural scientists, seeking precision and elegance for their findings and for the power to predict and reproduce experimental results - which scientists themselves insist upon if their conclusions are to be generally accepted. This is a criticism which both John Jewkes and George Shackle made in their time.

There are stronger grounds for stressing the importance of economics as the study of key aspects of human behaviour. But even here we should be wary. There is much to be said in favour of the ‘old’ behavioural economics, as Esther-Mirjam Sent has termed it [3]. But as for the ‘new’ behavioural economics as epitomised by Daniel Kahneman, I simply quote a passage from “Thinking, fast and slow” to demonstrate how far this paper is from such a mode of thinking:

> “We shouldn’t focus on a single scenario, or we will overestimate its probability. Let’s set up specific alternatives and make the probabilities add up to 100%,” [4]

In what follows here I shall, in short, be drawing upon my life as a heterodox economist.

But before I begin in earnest I should make it clear that there is one area which I will not be covering, although it is one which seems to interest many seen in the heterodox economics fold as I understand it [6], Marxist-radical economics or anything akin to this. I could, for example, have taken as my starting point Friedrich von Hayek’s “The Road to Serfdom” and his concern that from time to time we have progressively abandoned personal and political freedom. [7] In the Postscript to “The Constitution of Liberty” (1960) Hayek explained “Why I Am Not a Conservative”. [8] For him the conservative stance is one of seeking to block or slow down (rather than seriously reverse – except in the Thatcher years) interventionist trends, suspicion of uncontrolled social forces, fondness of authority, and lack of understanding of economic forces. But Hayek did consider that what he described as the liberal position shared with conservatism a distrust of reason to the extent that:

> “ the liberal is very much aware that we do not know all the answers … The liberal differs from the conservative in his willingness to face this ignorance and to admit how little we know, without claiming the authority of supernatural sources of knowledge where his reason fails him.” [*infra,* page 406]

This position was to be summarised in the title and content of Hayek’s excellent Nobel Memorial Lecture: “The Pretence of Knowledge”, on December 11, 1974.

The Contributions of John Jewkes

The former Professor of Economic Organisation in the University of Oxford whom I worked with for over four years between 1969 and 1973 was John Jewkes, justly famed for his books “Ordeal by Planning” (1948), “New Ordeal by Planning” (1968), “A Return to Free Market Economics?” (1978), and “The Sources of Invention” (1958 and 1969). [9] As the first Director of Economics in the World War II British Cabinet Office, and then Director of Planning at the Ministry of Aircraft Production, he had a background which made him an ideal author of “Ordeal by Planning”. He was also, subsequently, the President of the Mont Pelerin Society and Director of the Industrial Policy Group (where I was his Deputy). Among his starting points in “Ordeal by Planning” was Hayek’s “The Road to Serfdom”, yet he retained his concern that monopolies needed effective regulation where they actually existed.

Although John was widely known for his successive critiques of planning and the economists involved in such speculative activity, he was a warm-hearted and socially concerned individual. In the early 1930s he railed against “allowing the future man-power of the community to rot.” [10] He wrote extensively about the social implications of economic dislocation, particularly in the Lancashire cotton industry and in the area of Cumbria where he had grown up. There he wrote presciently about the likelihood that the area would continue to work under conditions of extreme difficulty, given the various reasons inhibiting industrial diversification, and as a result its capacity to provide employment would remain precarious. [11] In the early 1960s he expressed his concern that the National Health Service was doomed to remain second- or third-rate, and that professional medical staff were underpaid. [12] I strongly suspect that nowadays he would have been equally scathing about the widening of income differentials over the past twenty years in the UK as well as the over-generalised distribution of social security benefits. He was not an extremist, just a gentle rationalist.

In “New Ordeal by Planning” John was scathing about the indiscriminate distribution of public money to rich and poor alike in the name of the Welfare State, since this would take up such a high proportion of national investment that it would lead to the progressive enfeeblement of the private enterprise system. [13] One consequence which John noted forty-five years ago (not for the first time) was the persistent capacity of Labour Governments to engage in excessive expenditure resulting in heavy indebtedness. But John also noted that the second period of centralised planning began in 1961 under a Conservative Government, and that economists who engaged in statistical projections in the form of models of future growth which provided over-optimistic projections resulting in expanded government expenditure were among those culpable.

John also had other profound things to say about economists, the most brilliant and concise being his Brookings Lecture “The Economist and Economic Change”. This followed a paper published in *Lloyds Bank Review* for April, 1953, under the title “The Economist and Public Policy”.

In these two papers John was again highly critical of the gap between tool makers and tool users in economics, the excessive engagement in abstract economic speculation, and egregious modelling. We shared the view that such activity can be a helpful servant, but is too often a bad master. He considered that the major error of commission arose from the belief that economists can predict the future. He went on:

> “It cannot be too strongly emphasised that there is nothing in economic science which allows us to foretell events.” [14]

Yet John also recognised that thought needs to be taken for the future and to realise that actions should make some allowance for their possible consequences. Therefore, the role of the economist is to provide an understanding of the economic scene, making clear the unpredictability of change, helping to recognise as quickly as possible when changes have occurred and why, and by providing relevant information to allow timely and sensitive adjustments to be made.

In his Brookings Lecture John began by admitting that his *Lloyds Bank Review* article had been received “somewhat coldly”, which did not entirely surprise him although the warmest reception came from those had been actively engaged in economic planning and were less than wholehearted about their experiences. What did surprise him was that the article was largely ignored, and this was - and is - troublesome. [15] His Brookings Lecture should be read notably for his comments on the decline in authority of economic theory – which he considered largely the fault of economists themselves through their delivering themselves of opinions about the future for which no support can (or at least should not) be found in economic theory, and through the belittling of those older and simpler forms of economic logic which seem to have been the most reliable and useful in framing economic policy. One more point John emphasised in his Brookings Lecture – the need for a closer working contact with history to raise economic understanding. By this he meant economists should become more historically minded both by devoting more time studying the work of economic historians, and by engaging themselves in historical studies. He thought such study likely to lead to the conclusion that “the market is a great civilizer” and the most important economic concept was that of “opportunity cost”.

Over the next twenty-five years or so John was to explore the links between governments, public sector organisations, and private sector businesses with care and in depth. His 1964 Lindsay Memorial Lectures under the title “Public and Private Enterprise” referred to:

> “The inescapable uncertainties of the future seem to me to be one of the critical determinants of what governments should try to do and what success they are likely to have. The more striking errors in economic predictions in the past have not, I think, been sufficiently studied. If they had they might have made us much wiser about the value of peering into the future.” [16, p. 19]

In his final Lindsay Lecture John concluded:

"The economic system is not a machine but an environment, a set of relations between human agents and natural forces, of such infinite and organic intricacy that we possess, and probably will continue to possess, only imperfect understanding of it. It is, therefore, not surprising that those who have challenged this view and have set out to make a man master of his economic destiny have left behind them a trail of economic wreckage, all the more melancholy because it was the outcome often of noble hopes and scientific pretensions." [16, p. 89]

In John's final published work, he provided a General Introduction in which he again adversely criticised economists for claiming too much for their subject and attempting too much in its name. Once more he was scathing about economists turning to mathematical methods and formulations which forced them to make such simplifications in their basic assumptions that their conclusions became remote from the realities of the economic world. This widespread indifference to the close and direct study of the activities of men and women, had led to an "arid period through which economics (has) been passing – and in my judgement continues." [14, p. 4]

My own work over the past forty years has mostly involved energy issues - supply and demand, geopolitical implications, social and environmental aspects, policies and measures. The amount of misinformation, unrealistic targets, exaggerated claims, and misleading data continues to concern and irritate me. I have seen this at work in assessments of renewable energy prospects and of climatic change responses; in debates on how far claims of interested parties have been exaggerated; and on the realism of targets, policies and measures.

Underlying all these ideas, it seems to me, are: the need for openness of communication and information; the safeguarding of all such channels; the dispersion of decision-making (except in times of war, perhaps); the drawing on lessons from the past; and a receptivity to sound ideas and innovations as we face an uncertain future.

All the above I have taken to heart. Along the way I have come across those who are like-minded, who recognise the limitations of economics as commonly taught and practised; and, in a world where the future is uncertain, accurate prediction is fundamentally infeasible. One such person whom I was fortunate to meet, discuss such matters with, and exchange a fruitful correspondence with was Professor George Shackle. It is with George and his work and our exchanges that the rest of this paper is devoted. However, I discern a great deal of common ground in the fundamentals of thinking and their expression between John and George.

Recognising the distinction between Knowledge and Belief

For George Shackle economics was about thoughts, and therefore a branch or application of epistemics, the theory of thoughts. George went on, in the Preface to his book on the subject:

"Economics is concerned with thoughts about things, both directly, when business men consider the intended uses of their resources, and indirectly, when they consider and conjecture each other's thoughts about what to do with the resources entrusted to them. The conjuncture in our title, of the two words Epistemics and Economics expresses with precision my own belief about the essential nature of our subject." [17]

George had by 1972 spent nearly forty years reading and writing about economic theory, influenced by (and responding to) Keynes and by his former supervisor at the LSE, Hayek. [18]He had long had familiarity with the word 'epistemics', which had been coined by Patrick Meredith to reflect each individual's distinctive *inner world* of consolidated experiences. Meredith concluded that probability theory could be quite misleading, although most of us look out for stable things with reliable properties, and this leads to expectation about shapes, sizes, movements and general behaviour. [19]

Meredith had written as a psychologist, and specifically not as an economist, and had some reservations about George's conceptual model, especially the gap he perceived in the working out of the relationship between "credibility" and George's trumpeting of "potential surprise". But Meredith did highlight positively one of George's contributions:

> "Probability theory is hobbled by an entirely gratuitous bond with the counting of instances. By boldly severing the subjective degree of belief from frequency-ratios and turning probability upside-down in the concept of Potential Surprise Shackle has neatly side-stepped many of the incurable obscurities of the orthodox theory." [20]

Probability and uncertainty had been the focus of George's thinking and written work since 1939. My own reading of George's work did not begin until 1966, with "The Nature of Economic Thought: Selected Papers 1955-1964" (1966). This proved a particular revelation. Of the 22 papers, only four contained any hint of mathematics. The writing style was reminiscent of John Jewkes, homely yet profound in thought. There was the opening allusion to watching cricket and then to the hedgehog and the fox. The defects in much economic theorising, and the challenges of uncertainty and the unknown, were there together with the subject that has fascinated me for many years: "the business of choice amongst unknowns." [21]

From then on a reading of his earlier published work and new publications was a priority. But it was with an invitation from Professor Jack Wiseman to contribute a paper to the 1981 Proceedings of Section F (Economics) of the British Association for the Advancement of Science, held at the University of York, when events took another turn. I had worked with Jack, both for a couple of years in the 1960s and around 1980, and he knew I had been a member of Shell's scenario group between 1974 and 1979, and involved in scenario development. He also knew that subsequently I had employed scenario thinking to business decision-making. But it was out of the blue that I received a very kind letter from another planned contributor to the conference, together with a signed copy of his latest book: "Imagination and the Nature of Choice" (1979). The letter sender and author was, of course, George Shackle. Our contributions to the conference appeared in Jack Wiseman's "Beyond Positive Economics?" (Macmillan, 1983). Another contributor to that conference is here today in this AHE conference – Peter Earl, whose paper was entitled "The Consumer in his/her Social Setting – a Subjectivist View". A number of the contributors might be loosely described as "subjectivist" or "neo-Austrian" in their basic intellectual stance.

Peter Earl has continued to write about, and draw on, the thinking and work of George over the years, as six books on my own shelves attest. I observe that Sheila Dow's "The Methodology of

Macroeconomic Thought: A Conceptual Analysis of Macroeconomic Thought" (1996) also has its place there, in which six of George's books are referenced.

But for me and George the "excitement" – his word along with "jubilation" – was in our correspondence. There was I writing about Shell's scenario work for the conference [22]. There was George, who had not been in business but had written a great deal about uncertainty facing business decision-makers among others, seeking an avenue down which his ideas were being put into practice. The multiple scenario approach and its application riveted his interest. The ensuing correspondence is to be published as a chapter in a forthcoming book on George's life and work. [23]

Thus although George's contribution to the 1981 conference did not address the practical application of his ideas, or scenarios, he was very enthusiastic about the linkages between what he described as "the essential unity of Shell's practical thoughts and my abstract ones, flowing from sources quite separate and independent of each other."

The details of that correspondence are to be found in the forthcoming book by Bruce Littleboy and Peter Earl. More on Shell's scenario work can be found elsewhere. [24]. In York I spoke about the enlightenment which had come from developing scenarios about how the future global oil market might develop, the actions of OPEC oil exporters and the responses. The 1973 'oil crisis' and some of its consequences had been broadly anticipated, as were by some of us the crisis of 1979 and its aftermath. So were, again by some of us, the oil price collapse of the mid-1980s and the likely evolution thereafter through to the early 1990s. Suffice here to state that the multiple scenario approach has been found to be extremely useful in coping with uncertainty within Shell over the past forty years or so. Now it was George's turn. While we were corresponding about the York conference in 1981 George had begun his paper: "To Cope with Time". It was published in 1984. [25] A Discussion by Brian Loasby followed.

George placed his discussion within the context of "history-to-come", matters highly relevant to the business concerned, and with a given time-horizon. No single line can usefully be envisaged of "history-to-come", imagination around deemed possibilities is called for, and follow a "reasoned consequence of our elemental experience". George recalled how this system of ideas had sprung from first principles originally enunciated by him in his September, 1939, paper in the *Economic Journal*, which had reached their "definitive printed expression" in "Imagination and the Nature of Choice" (1979). He explained that this book had only been out a few months when he heard about Shell's multiple scenario approach which "had adopted a planning philosophy whose essential principles were the same, in a practical embodiment, as the ones I had been led to in theory." [24, p. 76] He made various kind references to our correspondence which "enabled me to study in depth the congruence of ideas … and base upon it my case for claiming that Shell's bold practical departure has vindicated my thoughts." A number of those who contributed to that conference in York back in 1981 – Peter Earl and Brian Loasby among them – would agree. [26]

The potential benefits of developing and applying a multiple scenario approach to help understand, and respond to, uncertainty cannot be gainsaid. But one does need a small group of people of diverse backgrounds and a capacity for independence of thought and expression for that potential to be realised. One of the benefits is likely to be an offsetting of excessive decision-making powers of leaders – not just in business – as such leaders may suffer from lack of imagination and/or hubris.

Conclusions

In some quarters heterodox economics has been seen under the umbrella of some "-ism" or other. This paper has questioned the fundamentals of this since it implies we know the answers to uncertainty and unforeknowledge. In seeking to cope with uncertainty and unforeknowledge we need imagination, flexibility, and freedom of action and thought. Heterodox economics at its best is a powerful critique of neo-classical economics. This paper has sought to show some of the history of economic thinking about uncertainty, the limitations of probabilistic thinking and quantification, and how some have found the employment of a multiple scenario approach consistent with recognition of uncertainty and unforeknowledge, and yet very useful in the real world.

The summary of the paper was followed by a showing of some of the slides from Shell's early scenario work, which has rarely been seen in the public domain.

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