Figures That Lie

By NORMAN GARDNER

"An error of ten per cent either way in national income figures . . . produces several hundred per cent error in growth rate."

"ESTIMATES of world rice production . . . show quite an encouraging picture. Output . . . is now 2 per cent higher than before the war . . ." How many times have we read statements such as this (quoted from *The Economist*). And how many times have we read on without questioning their validity? After all, one need not be a statistician to realise, upon a moment's reflection, that the statement is totally meaningless. One has only to consider the accuracy of for example Chinese, Burmese, and Siamese farmers' reports added together when calculating the world total.

It is perhaps of little importance that reputable journalists make the laughable mistakes they do. It is less of a laughing matter that governments regularly base important decisions upon grossly erratic information. Just how erratic this information can be is skilfully brought out by Professor Morgenstern in his book *On the Accuracy of Economic Observations*.* Even if one is already highly sceptical of the value of economic statistics, his findings can be guaranteed to surprise.

Take, for example, one of the more straightforward jobs of national accounting, the recording of annual gold movements. This presents none of the difficulties that beset the collection of agricultural or industrial statistics. There is no problem of classification; unlike steel or corn, gold is of uniform value. There is no need to conduct surveys or send out questionnaires; the figures arise directly from the records of the central bank in each country. Transport costs are negligible compared with the value of the cargo. Here in fact is a virtually ideal statistic. And, of course, it is a vital component of the balance of payments statistics upon which economists nowadays lay so much stress. Professor Morgenstern tests the reliability of government statistics relating to the same gold movement by comparing the figures issued by the United Kingdom and the United States. One would expect that U.K. exports of gold to the U.S. (according to the U.K. authorities) would be exactly the same as U.S. imports of gold from the U.K. (according to the U.S. authorities). The differences are considerable. In 1935 for example, the U.K. figure was £86 million and the U.S. figure was £65 million. That is a typical example; others could be chosen in which the ratio of the two figures is two, five or ten — even one case of twenty-eight — to one!

After this it is no surprise that similar comparisons of balance of trade statistics show discrepancies. Very few of Professor Morgenstern's comparisons show discrepancies of less than 25 per cent and many of them exceed 100 per cent. The average discrepancy Belgium/Great Britain during the period 1948 to 1960 is given as 191 per cent! To quote the author: "It is easy to arrive, if one wishes, at diametrically opposed conclusions based on 'the facts', by merely making a suitable and just as reasonable choice of the statistic."

National Income statistics cannot, of course, be checked for discrepancies in this way, and one must fall back upon "expert judgement." It is a relief to learn that the average error is estimated to be no more than about ten per cent (but one cannot help suspecting that this estimate may be somewhat optimistic). Individual items in the National Income account are more uncertain, however. For example, gross domestic capital formation, an important item for business cycle analysts, was reported as increasing by £541 million from 1954 to 1955. Taking possible errors for the two years into account, this figure could have been as low as—£37 million or as high as £1,119 million. In other words, the economy could have been in a major depression or in a superboom!

Before we console ourselves with the reflection that a ten per cent error in estimating National Income is, after all, not too bad, we should remind ourselves that the figure is used only for comparisons, and that every comparison magnifies the error. Suppose that the N.E.D.C. were to announce that between 1963 and 1964 National income had risen by the cherished four per cent. Excellent! But if they were to add that neither in 1963 nor in 1964 was national income known within ten per cent they would, in effect, be saying that national income may have risen by as much as 24 per cent or may have fallen by as much as 16 per cent! Over a very long period the significance of errors in estimating would no doubt be less important, but if average growth rate is computed over a period of years, a further difficulty arises regarding choice of the "base" year. Professor Morgenstern brings this point home by showing that U.S. growth to 1960 may be given values ranging from 2.3 per cent to 3.7 per cent per annum depending upon the choice of the base year from the range 1949 to 1955. The practice now so popular of comparing national growth rates takes the process of comparison and its consequent magnification of error a stage further, so that an error of ten per cent either way in national income, which (as we have seen) produces several hundred per cent error in growth rate, leads to errors running into thousands per cent in differences between national growth rates. Clearly the professor does not exaggerate when he says of growth

* Second edition. Princeton University Press, London: Oxford University Press, 52s.

rates: "the reliability of these figures is, for all practical purposes, zero."

The subject of the book lends itself to the liberal use of exclamation marks, but the author's approach is dispassionate and highly professional — so much so indeed, that its dramatic impact is not at first glance apparent. It is hard to see how its impact upon professional economists can be anything short of devastating.

The author does not attack the use of economic statistics — quite the contrary in fact. The temptation to conclude that "statistics is bunk" or to repeat one of the flippant and familiar catch-phrases about statistics must be resisted. As soon as one moves from theory to practice in order to propose a course of action, then questions are posed which demand statistical answers. Having, for example, established the theoretical case for land-value taxation, the question might arise whether the revenue collected would exceed the cost of collection, and until such a question is answered the proposal will not be taken seriously.

The fact that statistics contain errors does not necessarily make them useless or misleading. There must always be some element of error, but so long as the margin of error is known (or has been reliably estimated) and its consequences allowed for in all the calculations in which it is used, then the outcome will not be misleading and may not be without value. To find the combined effect of a number of errors requires knowledge of statistical theory, but the instances of the misuse of statistics cited by Professor Morgenstern arise not from lack of such specialised knowledge but from failure to use ordinary common sense.

On Professor Morgenstern's evidence, however, much of current economic literature constitutes mass self-deception, wilful or inadvertent, on a scale that must be without parallel in the history of knowledge.

Shaping the Past — and the Future

BEFORE the days of the T.V. educationist, the ordinary mortal could be excused for regarding history as a straightforward and objective study. We learned it all at school. 1815, 1588, 1066 and all that flowed into and out of our perception leaving us better informed if none the wiser. And the whole affair was factual, impersonal and mostly very dull.

With the advent of A. J. P. Taylor, Trevor Roper and others, history revealed its life, its liveliness — and its limitations. No one listening enthralled to the T.V. tuition of Taylor and his colleagues can doubt the interest, the drama, the pathos, and sometimes the human poignancy, of much that lies beneath the dust of history. But equally no one can doubt the subjectivity of its presentation. Bismarck in the hands of Taylor shapes differently from the same man presented by some other historical sculptor. Queen Bess may have been "good" to some historians, but not to others. The history of the 1962 clash between India and China will be written differently in New Delhi than in Pekin. What then is history?

In an interesting and erudite, if rather lengthy, attempt to answer this question — What is History?*—Professor Carr insists that the historian is no desiccated recording machine but a human being subject to all the human frailities. His historical facts are selected according to his own particular viewpoint, and these produce a work which, from first to last, is essentially personal and subjective. When Henry Ford said "history is bunk" he coined a phrase noted more for its outrageous iconoclasm than its accuracy. Nonetheless, if Professor Carr is right, Ford's words were no more than a caricature containing a considerable portion of truth.

* *What is History*? by E. H. Carr. (Pelican, 3s. 6d.)

But not only are historians human; times change. Historians, like other men, are creatures of their environment and, like other men, they are apt to accept the current conventional wisdoms and allow these to influence their judgement of events. As the author points out, so long as the main good of society appeared to be the organisation of constitutional liberties and political rights, the historian interpreted accordingly. When, however, economic and social ends became paramount, historians turned to economic and social interpretations. Thus historians nowadays concern themselves with the change from a *"laisser faire* economy to a managed economy" and consider the extent to which historical events lead to "progress" along this road.

Judging from Professor Carr's own beliefs about this transition in the philosophies affecting the economic scene, the value judgements of modern historians on the question of individualism versus state control will bring little cheer to the readers of LAND & LIBERTY. The desirability of state control, with all the attendant trappings of welfare state paternalism, appears to be accepted without question. Which only goes to prove the author's point that historians are human and fallible!

One day, perhaps, the conventional wisdom will change and historians will once again record the progress of man towards those sunlit uplands of freedom and individualism which must always be his goal. Then, perhaps, the period through which we are now passing will appear to historians as it really is — a Dark Age of restriction and near-repression when, through a mixture of fear and ignorance, man surrendered much of his economic freedom for the doubtful benefits of state monopoly, socialist planning and misguided authoritarian control. B. W. B.