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IN MEMORIAM
SIR RICHARD STONE
KT, CBE, ScD, FBA
(1913-1991)

Members of the *Association* will be sad to learn of the death, on 6 December, 1991 of one of its founding and most distinguished members, John Richard Nicholas Stone, both on account of the personal loss for those of us who knew him and also because of the distinction he brought to the work of the *Association* and the consequent pleasure for its membership when, in 1984, his work on national income accounting was recognised by the award of the Alfred Nobel Prize in Economics.

Born on 30 August, 1913 the son of Sir Gilbert Stone, a lawyer who was later to become a judge in the Indian High Court, Dick Stone, as he was known to his friends and associates, was educated at Westminster School before going up to Gonville and Caius College, Cambridge, to read law. However, this early interest in his father's subject did not sustain and, having obtained a first in the examinations, he switched to economics and repeated the distinction. More significantly, perhaps, he was tutored by Colin Clark, who evidently provided a critical stimulus to the curiosity which motivated Stone's subsequent career. In his Nobel Memorial Lecture, Stone has stated plainly that it was Colin Clark's work on the national accounts that was the inspiration for his own, and it is obviously to Clark that one must again go back to trace the roots of Stone's abiding interest in index numbers and purchasing power parities. It may then be more than a matter of coincidence that Colin Clark and Richard Stone shared a certain aversion to economic theorising for its own sake, and that both should include the early political arithmetician, Sir William Petty, among their heroes.

This, then, is some of the background to the story which has been told often enough before of how, following a period in the City, (during which he produced, with his first wife, Winifred Jenkins, a statistical publication on *Trends*), Dick was to move to Whitehall and, in due course, to join James Meade in compiling estimates of the national income and expenditure accounts for the U.K. in double entry format. Their efforts were rewarded by having their results included by Keynes as an appendix to his famous 1941 White Paper on the budget, and so the pattern was set for Stone to spend a large part of the remaining war years developing the national accounts, an undertaking for which he was made a Commander of the British Empire in 1946.

It was also Keynes who deemed that Cambridge should have a Department of Applied Economics (DAE) after the war, that Stone should be its director, and that he should become a Fellow of King's College. But it was Dick Stone who seized that opportunity and, in the course of less then a decade, established for the Department an international reputation which was unprecedented in

British social science and has not been equalled since. Moreover, while Stone's continuing work on national accounts was preeminent throughout this period, leading up to the first official international guidelines, published by OECD in 1953, it was not for this work that the DAE became so famous. Rather, the Department's reputation was built on the role its members played in developing the methodology of econometrics and, in particular, their pioneering work in the field of demand analysis. It was largely on the strength of this contribution to applied microeconomics that Richard Stone was subsequently awarded the Doctor of Science degree by Cambridge University and that, in the view of many, he might well have been awarded the Nobel Prize. The fact that Stone did not win the prize for this work should not detract from its importance. Indeed, it can be suggested that no one else in economics has established such a strong claim to be so honoured for contributions in two such distinct areas.

The origins of Stone's interest in demand analysis can traced back at least as far as a 1945 paper in the *Journal of the Royal Statistical Society* and was prompted by the problems of rationing. It was to culminate in 1954 with the publication of his seminal work on "The Measurement of Consumers' Expenditure and Behaviour in the United Kingdom, 1920-38," and his paper in the *Economic Journal* of the same year which established the linear expenditure system. In the years between, Stone was able to attract to Cambridge many of the leading statisticians and economists from the United States and to provide a creative environment for their work, alongside such British counterparts as Jim Durbin, Michael Farrell and Derek Rowe. By 1954, these pioneers had developed, in most of its essentials, the basic methodology of applied microeconomics for working with time series and cross-sectional data. Interestingly, their emphasis contrasted with that of the Cowles Foundation in the United States, whose members were evidently more concerned with methods of estimation, especially from time series, while Stone and his collaborators showed a much greater concern for model specification and for the data themselves.

There were some important changes in Richard Stone's life at this time. He spent a year on leave in the United States, during the course of which he accepted appointment as P. D. Leake Professor of Finance and Accounting, a position he held until his retirement in 1980. The subsequent discovery that this precluded his continuing as Director of the DAE must surely have raised an eyebrow. Also in 1955 he became President of the Econometric Society and, in 1956, was elected a Fellow of the British Association. That same year his second wife, Feodora Leontinoff, died.

By the end of the decade, a new release of creative energies was evident with the launch of the Cambridge Growth Project in collaboration with Alan Brown. The central idea was to synthesise demand analysis with input-output in an exercise which paralleled the work in Norway of Lief Johanson and can be seen in retrospect as an immediate precursor of applied or general equilibrium models. The Cambridge Growth Project was to set new precedents as the longest running research project in Britain and, having started in 1959, continues to this day through the work of Cambridge Econometrics. I recall the toast to the future by Giovanna, now Lady Stone, with which the project was launched. This new

work was soon to show its paces by demonstrating that the British economy was unable to grow at much over 2 percent per annum, given its structure at the time. But there was little response by Government or the profession to this discovery and the work in those early days was more influential in stimulating the developments in national accounting which have since been enshrined in the 1968 United Nations System of National Accounts (the SNA).

As early as 1936 Leontief had recognised that transactions between a group of people or institutions could be concisely represented in a single entry, matrix format. However, it was left to Stone in a 1948 paper to show that this same idea could be applied to types or categories of transactions and, specifically, to the different dimensions of the national accounts. It was not until 1960, however, that this idea was fully exploited by Stone in designing the basic data framework to complement "Rocket," the system of equations which Alan Brown and Lucy Slater had by then succeeded in solving on the University's computer.

The 1968 SNA was a pinnacle of accomplishment that could hardly be repeated. Yet Stone was soon embarking on a new venture, a major restructuring of social and demographic statistics: "Towards a System of Social and Demographic Statistics" was published by the United Nations in 1975, having previously enjoyed an airing as the Radcliffe Lectures at the University of Warwick in 1970.

Numerous honours and distinctions were to be awarded to Dick Stone as he approached retirement, including honorary degrees from the Universities of Warwick, Oslo, Brussels, Bristol, Geneva and Paris. He was elected an Honorary Fellow of his former college, Gonville and Caius, in 1976, and President of the Royal Economic Society in 1978. In that same year he was knighted, along with Maurice Kendal, in a celebration of British contributions to statistics.

Ill health in his later years was not allowed to diminish the enjoyment of friends, good food and books which Dick and Giovanna shared. Their hospitality was a very special blend of warmth and refinement. And when they were not entertaining, Dick and Giovanna enjoyed reading to each other after dinner, a custom they inaugurated by taking turns in reading Freud's complete works. Dick made no secret of the fact that his favourite hobby was to stay at home.

In recent years Dick and Giovanna had been engaged in preparing a collection of essays based on the contributions of various individuals who demonstrated during their lives a flare for empiricism. I understand that Giovanna is going to finalise this work. And when it is published I shall be anxious to find out if a particular London doctor is to be included in the volume. His claim to be there, as recounted to me by Dick, rests on his having first plotted the location of cholera cases on a map, and having then recognised that they were clustered around the points at which the city's effluent was being drained into the river Thames. I wondered when I first heard this story if this particular doctor was not, perhaps, another of the heroes of a man who observed in the spring of 1940, that a number of Italian vessels had changed their course, and that all were now heading towards neutral ports. From this observation Dick Stone predicted the date on which Italy would join the war, basing his calculation on the time that was required before each of the vessels would be safely harboured.

There are many more stories which could be told, and it would not be surprising if eventually they merged into a legend. What is surprising, perhaps, is that Dick Stone was not as well known as he ought have been among economists at large. The loss is theirs, as well as ours who knew him.

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