

PLATE XXII



*Walter Stoneman*

ROY ALLEN

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1906-1983

ROY ALLEN died from a heart attack on 29 September 1983, a few days before a party at the London School of Economics to mark his retirement after fifty-five years of teaching there. He was one of the most accomplished statisticians of his time and a man who commanded universal admiration and affection.

He was born in Stoke-on-Trent in 1906 but grew up in Worcester where his younger brother and sister were born. His father, an expert fresh-water angler, ran a fishing-tackle shop and the family lived above it. Roy went to the local primary school and from there, on a scholarship, to the Royal Grammar School. He won many school prizes, showing ability in all subjects (including art), without being any good at games. At school cricket matches he often acted as umpire and he retained an enduring interest in the game and in the fortunes of 'his' county. Yet although attached to Worcester, at that time a very attractive town, he seems to have felt more affection for his birthplace in the Potteries and spent many of his school holidays there.

Roy had some difficulty in deciding what to read at University and at one point was seriously considering history. In the end he went up to Sidney Sussex College, Cambridge, in 1924 as a mathematics scholar. In spite of the well-known limerick about  $w + x$ , there was a long tradition of mathematical scholarship at Sidney Sussex and Roy helped to maintain it, getting a First in Part I in 1925 and becoming a Wrangler in 1927. From then on he veered away from pure mathematics. Awarded a research scholarship, he stayed on for a fourth year but spent most of it reading economics and philosophy before joining Professor A. L. Bowley at the LSE in 1928 as an assistant lecturer in statistics. He remained there throughout his career, except in wartime or when acting as a consultant or visiting professor, rejecting all offers from elsewhere, however tempting, including a Chair at Oxford ('far too parochial to suit me') and the Mastership of a Cambridge college. When presented to the Queen at a British Academy reception, he was asked by Her Majesty why he had stayed so long in one place and replied with his usual quiet modesty: 'If one happens to be in the best place, why should one move?'

His appointment at the LSE was at first for one year only but was renewed for a second year and then for four more. It was not until 1934, after six years as an assistant, that he was promoted to a full lectureship. But he quickly made his mark and by October 1939 had been appointed 'Reader in Economic Statistics with special reference to Mathematical Economics'. Five years later, in 1944, while still on war service in Washington, he was appointed to the University Chair in Statistics, a Chair he continued to hold until 1973. Even after his retirement from the Chair, his association with the LSE was unbroken, for he went on teaching there until just before his death a decade later.

Living and working in the LSE, Roy inevitably became interested in economics and, being a mathematician, started out to translate the imprecisions of verbal exposition into the precisions of mathematical formulation. He began with a paper on 'The Foundations of a Mathematical Theory of Exchange' which he read at the centenary meeting of the British Association for the Advancement of Science in 1931 and expanded for publication in *Economica* in the following year. After two more articles, one in the *Economic Journal* on the controversy over decreasing costs under competitive conditions and a later one, stimulated by the work of Ragnar Frisch, on 'The Marginal Utility of Money' he joined forces with John Hicks to produce their path-breaking 'Reconsideration of the Theory of Value', the second part of the article appearing over his name in *Economica* in May 1934.<sup>1</sup>

These articles were followed soon afterwards by two books. The first was a study along traditional lines of patterns of consumer spending, *Family Expenditure*, written in conjunction with his predecessor in the Chair, Sir Arthur Bowley, in 1935. Then in 1938 came the textbook on which a whole generation of mathematical economists was brought up, *Mathematical Analysis for Economists*. Translated into over twenty languages, this has been one of the most powerful influences on the way in which almost all economic argument is now presented.

During the war he joined the Treasury where he did invaluable work as a statistician, helping to reduce the data on exchange requirements and the balance of payments to order. In 1941 he was transferred to Washington where he spent the rest of the war, first as Director of Records and Statistics in the British Supply

<sup>1</sup> The nature of their collaboration has been explained by Hicks in the first volume of his Collected Essays (*Wealth and Welfare*, 1981, pp. 3-5). It is there shown that the extension of the argument to choice involving more than two goods, from which so much has sprung, was essentially due to Allen.

Council and then, when the Combined Production and Resources Board was set up in 1942, as Director of Research and Statistics, a key post which he held until recalled urgently at the end of the war by the LSE to assume his new duties as Professor. It was his job to co-ordinate British and American statistics of war production, but since he was knowledgeable on all aspects of economic collaboration between Britain and the United States, he was much in demand for assistance and information on a whole range of economic problems. One study in which he took part, ultimately published as *The Impact of the War on Civilian Consumption*, compared the changes during the war in the level and pattern of consumer spending in the United Kingdom, the United States, and Canada. Another fruit of his Washington experience was the definitive account he gave to the Royal Statistical Society in 1946 of 'Mutual Aid between the United States and the British Empire'.

After the war, he continued to take on government work of all kinds: as adviser, consultant, representative, member (or chairman) of government committees. He was called back by the Treasury in the crisis following the suspension of convertibility in 1947, in order to improve the flow of statistical information on the dollar drain. The year before, he had been with the Economic and Social Council of the United Nations for six months and in 1949-50 and 1952 he was again attached to the United Nations, on both occasions as a consultant to the Statistical Office in New York. He served on the Research Council of DSIR in 1964-5, on the UGC in 1966 and on the Council of the SSRC in 1967-70. He was involved for many years in the regulation of civil air transport, first on the Air Transport Licensing Board from 1960-72 and afterwards on the Civil Aviation Authority in 1972-3. Over the same period, in 1962-3, he was a member of the Committee of Inquiry on Decimal Currency. He also served on the Royal Commission on Civil Liability in 1974-8 and was Chairman in 1963-5 of the Committee on the Impact of Rates.

If this catalogue includes little for the 1950s this merely indicates that his energies were employed elsewhere. He did a good deal of travelling. In 1950 he was a Visiting Professor at Harvard and in 1958-9 at the University of California in Berkeley. He visited other places, too. Sir Sydney Caine invited him in 1955 to take the place of Sir David Hughes Parry in advising on the development of law teaching in the University of Malaya in Singapore—an unusual assignment for a statistician but one in which he worked successfully with representatives of the local legal profession in devising an appropriate structure for a degree.

These activities were only a small part of his life. He found time to take part also in a long list of academic and professional bodies, not least the British Academy, of which he was a Fellow for over thirty years and Treasurer from 1954 to 1973. He held the same office in the International Institute of Statistics in token of his interest in, and influence on, international statistics. He was prominent in the Royal Statistical Society, serving for many years on the Council and then as a particularly distinguished President. The British Medical Association employed him as a consultant and he was also in close touch with other professional bodies like the Institute of Actuaries (of which he was an honorary member from 1965) and the Institute of Statisticians.

The help which he gave to one government after another, and the contribution which he made to establishing the use and importance of statistics and raising the status of the statistician, were recognized in the many honours he received, notably the rare award of the Guy Gold Medal by the Royal Statistical Society in 1979. He was knighted in 1966 and was made an Honorary Fellow in the 1970s both by his old college in Cambridge and by the LSE.

When he was faced with the problem of bringing up-to-date his *Mathematical Analysis for Economists* he decided that conditions had changed too much for this to be appropriate and that he should instead write a completely different book, 'a text on economic theory written in mathematical terms'. So he set about preparing 'a fairly systematic treatment of some of the more important and simpler parts of mathematical economics'. This appeared in 1956 as *Mathematical Economics*. In 1962 he had another 'go' at a mathematics textbook for the economist, *Basic Mathematics*, a full and comprehensive treatment. A fourth major textbook, *Macroeconomic Theory: a mathematical treatment*, was published five years later, complementing and at some points updating his *Mathematical Economics*.

This was a study in model-building, undertaken with his usual skill and lucidity. But Roy had no illusions about the gulf between models and reality. 'The models considered here', he wrote, 'are many times removed from policy applications. Because of their precision they are not easily used in any consideration of how the working of the economic system should be viewed in practice.'

He showed the same caution when he turned from using mathematics to using statistics. In four textbooks written after the war he tried to educate economists in the intricacies of statistical data: *Statistics for Economics* (1949); a volume of *International Trade*

*Statistics* (1953), edited with J. E. Ely, to which he contributed a chapter on 'Index numbers of volume and price'; *Index Numbers in Theory and Practice* (1975); and, last of all, an *Introduction to National Accounts*.

For one man to write eight textbooks—the hardest for a writer to tackle—is no mean feat; and all of Roy's were first-class in quality, compendious in treatment, beautifully clear. In addition there were his many articles and contributions to official and other reports. He showed a particular fondness for writing about index numbers and a great reluctance to comment on economic policy. Both traits appear in his Stamp Memorial Lecture, 'On the decline in the value of money', in 1957. After performing some tricks with index numbers, Roy analysed the movement in prices in the 1950s into the four components he used on later occasions: import content, employment income, profit income, and indirect tax. But he was not willing to jump from his analysis into policy prescriptions by assuming that inflation was simply the sum of those four elements. Instead, he concluded that 'we need to know a good deal more about the dynamics of inflationary and deflationary processes before we can reach agreement on what remedies to apply'.

Roy was a first class administrator as his success in guiding the expansion of his Department over the past fifty years amply demonstrates. When Professor Bowley retired in 1936 the Department consisted of one professor, one lecturer, and one assistant and one part-time lecturer. When Roy in turn retired in 1973, the staff had grown to 28, with 7 Professors; and ten years later these totals had become 34 and 9 respectively. The expansion in scope was equally striking, with a considerable widening of the range of applied statistics and all the new developments through extension into the vast world of computers.

Such an expansion was only possible because of solid financial support and Roy recognized the need to prepare his case for such support with great care. So lucidly and persuasively did he present the case that it was rarely necessary to ask for elaboration or further explanation. Whether he had to carry an individual or a committee with him, he was remarkably successful, largely because he had done his homework very thoroughly, considered the difficulties and worked out solutions in advance. Perhaps also the very fact that he was so self-effacing made him all the more effective when he intervened. Professor W. T. Baxter tells the story of a useful reform that was urged on the LSE Appointments Committee unsuccessfully by one member, who put his case ineptly

and had it rejected with scorn. The same reform, proposed by Roy a year later, was passed unanimously without discussion. Roy rarely said much when attending a committee but he knew the right moment at which to intervene and when he did so, was always highly effective.

The same clarity of mind that is evident in his books also distinguished his teaching. He was an exceptionally good teacher who made time to teach first-year students as well as those who were more advanced. He was fond of his students and generous with his time and encouragement, while they in turn were deeply appreciative of his help. Postgraduate students from all over the world—and especially those from developing countries—held him in the highest regard.

Roy combined great powers of concentration with exceptional intellectual energy. When he was working at home nothing would disturb his concentration. Sir Claus Moser recalls that when Roy took his sons to a museum, he could get so absorbed in an exhibit that he would effectively lose them. On the other hand what struck anyone meeting him for the first time was his unassuming friendliness, informality, and modesty. It was only later that one realized how methodical, clear-headed and hard-working he was.

His former secretary for twelve and a half years (now married to a former member of his department, Professor Graham Kalton) remembers him as ‘the ideal person to work for’.

‘I almost always knew his exact whereabouts’, she wrote to Professor L. C. B. Gower after Sir Roy’s death, ‘and he would show up just when he said he would. . . . He was considerate, even-tempered and generous. He was meticulously well organised. He would dictate reams and reams of reports, articles, etc., from rough notes with almost no hesitation. Rarely did he alter anything, his notes were so well prepared. His book manuscripts were so neat that I rarely had any query on the masses of complicated mathematical material he produced. He was always immaculate in dress, with neat little bow ties, and in the way he kept his room. Although he was involved in such a large number of things at the same time, he was always readily available to his students, never flustered, and willing to turn his mind immediately to the problems of anyone who needed his advice.’

Mrs Kalton’s husband bears out this recollection of a well-organized man, shouldering an enormous load without any sign of haste or pressure. Roy told Professor Kalton that he had written his books ‘in the middle of the night and after a full day’s work, teaching, administration and numerous governmental

committees. He arrived at the LSE regularly at 9.15, worked all day, often went out in the evening to dinner and the theatre and then resumed working into the small hours.'

The LSE also played a central part in his personal life. It was there that he met his wife when she was a statistics student and he her tutor. They were married in 1936 and remained devoted to one another and to their three children. Indeed, Roy was above all a family man and, however absorbed in his work, it was his wife and family that came first in his thoughts.

He was a great lover of music, although he himself played no instrument. According to his wife, whenever he was in the house there was always music, records, or radio. Perhaps, she has suggested, his love of music came from his upbringing in a cathedral city. He was also very fond of theatre and ballet and above all he liked travel.

Although he never sought the limelight or wished to become a public figure, Roy Allen's achievements were many. He was highly successful in everything in which he engaged. He made distinguished contributions to the study of statistics and to the application of statistics to public policy. He helped to raise the status of statistics both as an academic discipline and in the public eye. He inspired and encouraged generations of students. He administered a large and rapidly expanding department and in so doing helped to enhance the reputation of the institution to which he gave half a century of service.

ALEC CAIRNCROSS