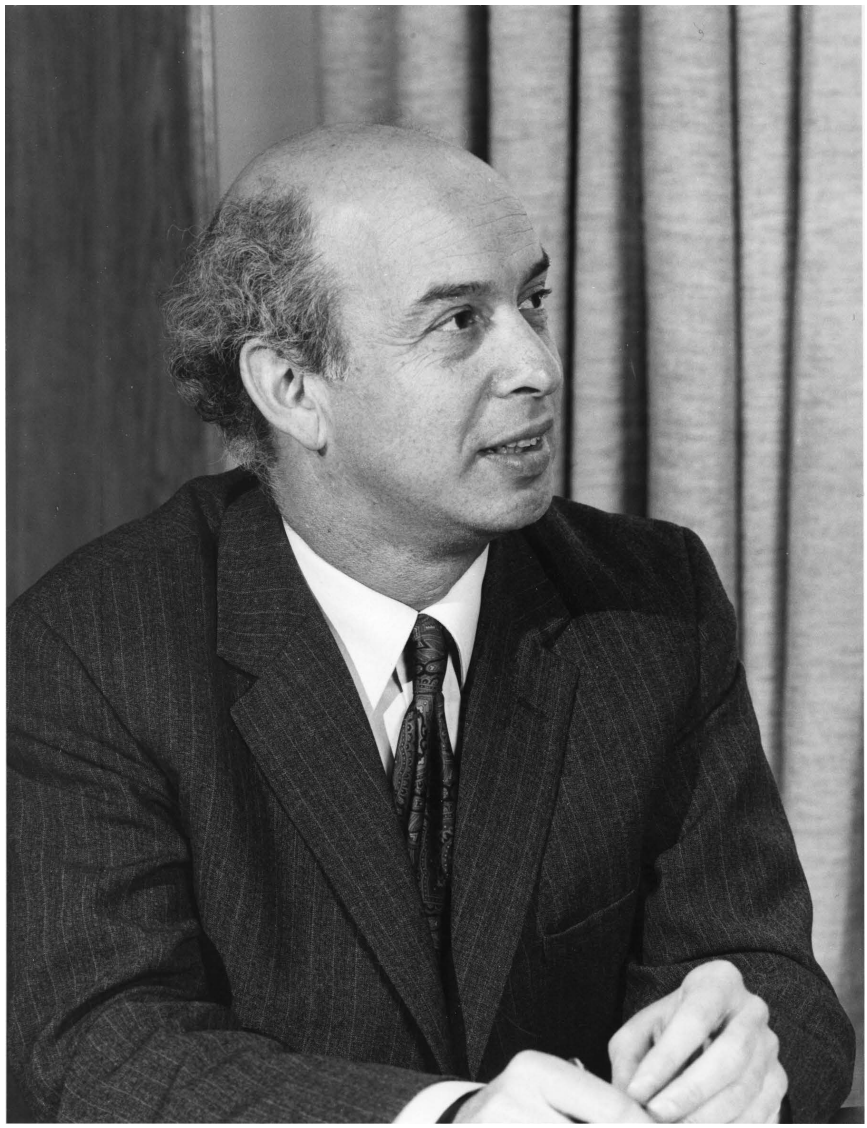

CLAUS ADOLF MOSER

Claus Adolf Moser
1922–2015

Early life

Claus Moser was brought to England by his parents as a thirteen-year-old German boy. He was born on 24 November 1922 and died at the age of ninety-two as Baron Moser of Regent's Park. His appropriate title changed during that interval, but to friends and acquaintances alike he was always known as 'Claus' and that is how he will be designated here. He was born in Berlin into a prosperous and cultured family. His parents were Ernst and Lotte Moser, who were both Jewish. Ernst was a successful banker; his mother was a talented pianist; he had an older brother, Heinz Peter.

Even though Claus did not become a professional musician, he clearly inherited his skill as performer and his passion for classical music from his mother's side of the family. Music was an integral part of his life and, as we shall see, found an outlet throughout his life.

His parents foresaw that trouble was brewing for the Jews in Germany and in 1936 they removed the family to England, where they set up home in Putney, London. Claus was then thirteen years old and, having had the benefit of an English governess, the new language presented no particular problem as early extant letters show. He was sent to Frensham Heights School, a progressive independent co-educational boarding school, near Farnham, Surrey, which proved to be hospitable to refugees. This provided an ideal place for Claus; it fostered his musical talent and provided a happy environment which he greatly enjoyed. At the appropriate time he sat the Oxford and Cambridge School certificate in which he obtained five

Biographical Memoirs of Fellows of the British Academy, XVI, 171–188.
Posted 25 April 2017.

credits and two passes. This was a good, though by no means outstanding, result but it was achieved after only two years in what was, after all, Claus's second language and a foreign country. However, the School Certificate was particularly significant, in view of later developments, because it gained him exemption from the London Matriculation examination which was necessary in order to embark on a degree course of London University.

In 1940 Claus was interned as an 'enemy alien' at Huyton, Liverpool. The only evidence we have for his subsequent interest in statistics is the experience he gained of social investigation by assisting a mathematician who wanted to keep records of the characteristics of the internees there. He was soon released, because of his age, in the autumn of 1940. With the support of his headmaster he applied for late entry to the London School of Economics (LSE) to study for the BCom degree. It is believed that his father favoured training for a career in the hotel business so we may surmise that a degree, ostensibly in commerce, might have seemed an acceptable alternative. Whatever the truth of that hypothesis, it is clear that, after some correspondence, he entered the LSE in November 1940. At that time the LSE had been evacuated to Cambridge and Claus was allocated lodgings at 5 Trumpington Street at a weekly charge of 35 shillings. Apart from his studies, on which he received excellent reports from his teachers, Claus was very active in the Students' Union which, according to his tutor, did not significantly impinge on his academic work. This activity evidently included music, because it was the Union which recommended him for the Jessie Mair Prize awarded for his musical activities.

Before long Claus took steps to transfer to the BSc (Econ) degree which ran in parallel with the BCom. For the transfer to be possible it was necessary to satisfy the first year BSc (Econ) requirements, and Claus was clear about how this could be done. The structure of both degrees was similar. There was a Part I examination in both taken at the end of the first year followed by a Part II extending over the following two years on which the class of honours was awarded. In order to satisfy the requirements of the BSc (Econ) Part I, a course on the British Constitution was necessary, and Claus had thoughtfully anticipated this by attending the lectures for this course. By means of this and other measures, a successful transition was negotiated and for the next two years Claus became a candidate for the BSc (Econ) degree with special subject Statistics. The reason for choosing Statistics was presumably his experience of his aforementioned rudimentary social statistics gained during his internment, but it was certainly justified by his Part II results. He was also awarded a 'post Inter' Leverhulme scholarship which covered some of his fees.

In the Part II examination Claus obtained first-class honours and was awarded the Farr Medal and Prize for the best first. (During wartime it was said to be not possible to strike the medal because of restrictions on the use of silver, but Claus was assured that the award would be listed in the records. Later it emerged a medal could be struck after all.) Additionally he was awarded a Gerstenberg Studentship in Economics, but this was not taken up.

This was 1943, and when he graduated there were very limited options available. One possibility was to volunteer for service in the armed forces and the other was to obtain a post as a statistician in work of national importance. He received rather conflicting advice on the latter option; it appeared that there was a shortage of mathematical statisticians but no shortage of economic statisticians—which is how Claus would have been classified. Carr-Saunders, the Director of the LSE, was strongly in favour of volunteering for active service not least because it might be counted in Claus's favour when he applied for naturalisation after the war. In the event Claus 'joined up'. He applied for aircrew duties, but was rejected on the grounds that if he was shot down over enemy territory his German origins might cause complications. Hence, he became a ground crew member in which category he served in a number of capacities such as interpreting and, latterly, helping to evaluate the results of Allied bombing. He reached the rank of sergeant. On the last day of the war he was involved in a serious car accident close to the Belgian–German border which resulted in a prolonged hospital stay, initially nearby and subsequently at the specialist and innovative plastic surgery unit set up by Sir Archibald McIndoe in East Grinstead, Sussex.

The transition from a private school and university to the non-commissioned ranks of the RAF was a major step. It was one thing to flourish in an environment in which one excelled and was 'deservedly popular' among fellow students and quite another to rub shoulders with people whose background was very different. He quickly recognised the reason for this unease and, once he adjusted to the new situation, the initial difficulties were resolved.

At the end of the war the need for his services ceased, but there were complications about the date of his demobilisation. This took place in batches, and Claus calculated that his release was going to be too late for the beginning of the academic year. This mattered because he had been offered a post at the LSE from the beginning of October. However, early release could be obtained if a good case could be made. This was achieved, and he started his academic career on the staff of his old department as

an Assistant Lecturer in Statistics, as he had hoped. At one stage prior to this he had contemplated proceeding to take a PhD, but this possibility was quickly superseded by the opportunity to join the staff.

Starting as an assistant lecturer, Claus moved through the grades at a steady pace, attaining a professorship in 1961. Progress was not automatic and the procedure varied somewhat over time as the relationship between London University and the Schools changed. The assistant lecturer grade was normally thought of as probationary and appointment to it was usually for three years, with a possibility of a fourth year in cases of doubt. Claus progressed to the grade of lecturer on 1 October 1949 after three years. For several years around this time he was involved with the International Statistical Institute, which he served as part-time Executive Officer of the International Statistical Education programme, being granted the necessary leave for the purpose by the LSE.

Promotion to the higher grade of reader (or senior lecturer for that matter) was not automatic and could occur only when the lecturer's performance justified it. In Claus's case the University conferred the title of Reader in Social Statistics after only six years on 1 October 1955. The case was made by the School in glowing terms, with the letter of support saying that 'he had done extremely well in his subject'. In 1957 he was invited to fill a temporary appointment (to work on a programme of family living studies) in the Statistics Division of the International Labour Office based in Geneva for a whole session (1957–8), and permission was granted.

The final promotion to Professor of Social Statistics took effect from 1 October 1961. In this case promotion would have depended on the research record as well as on teaching and general ability. In view of what follows, this can be conveniently dealt with as a whole.

The publication record falls in two parts. The first dates from first appointment until his move to the Robbins Committee (while a professor) and the second from that point until he moved to government service.

The early part shows a steady record of publication, including one paper jointly with Alan Stuart, on reviews of empirical studies of sampling methods. This is what one might have expected from someone at the beginning of their academic career. In addition, and more importantly, there was the highly successful book *Survey Methods in Social Investigation*, first published by Heinemann Educational Books. This first appeared in 1958 and was reprinted eight times until the second edition appeared in 1971. By this time Claus was Head of the Government Statistical Service (GSS) and he was helped in preparing the new edition by Graham Kalton, who remained as a joint author for at least seven further reprintings.

Kalton had been an undergraduate in the Statistics department, graduating in the year that the first edition was published. He later moved to the University of Michigan and then to WESTAT in Maryland. This book was originally based on a course given at the LSE and is therefore better regarded as a record of teaching rather than of research. It is comprehensive, authoritative and beautifully clear, and well deserved its wide readership and the 'classic' status it acquired. The principal changes in the second edition were the division of the original chapter on 'Principles of Survey Design' into two new chapters and a new chapter on 'Experiments and Investigations'. The authors later discussed the possibility of a third edition, but this would have required a major revision that they were not in a position to undertake. It was undoubtedly the most successful of Claus's publications in terms of sales, as he himself once remarked. Apparently Heinemann made no special provision for sales in America, otherwise the sales might have been even greater.

The big step in Claus's research career began with his appointment as statistical adviser by Lionel Robbins in connection with the work of the Robbins Committee set up in 1961. This event probably shaped the whole course of Claus's later career. The government decided to conduct an enquiry into the future of higher education in the UK. It asked Lord Robbins, Professor of Economics at the LSE, to chair the committee, and henceforth it became known as the Robbins Committee. Lord Robbins was convinced that his report should be a means to an evidence-based policy and hence that it must depend on data, much of which did not then exist. Accordingly, he asked Moser to join the Committee as its statistical advisor. In the event Claus was much more than advisor and he became intimately involved with its work and took part, for example, in all of its overseas visits. In the report Claus's key role is acknowledged as follows: '…and to our statistical adviser, Professor C. A. Moser, without whose dedicated labours it could not have been conceived, let alone brought to fruition'.

The Committee was concerned with two major questions: (1) 'How was the likely demand for higher education in the future to be met?'; and (2) 'How could enough good quality teaching be provided and how should it be financed?'. In order to provide a base for its deliberations Claus decided to conduct three surveys. One was of students, another was of teaching staff and the third was of twenty-one-year-olds whether already in higher education or not. The results of this research were published in five appendix volumes to the main report and these have been widely considered since as a model of relevant evidence, clearly presented. This work

was the responsibility of Claus and proved to be the bedrock of his future as a renowned social statistician.[1]

When the committee finished its work in 1963, those who had worked with Claus on this project formed the nucleus of the Higher Education Research Unit which Claus set up at the LSE in 1964 under his directorship, with Richard Layard as Deputy Director.

Government service

Around 1966 the Director of the Central Statistical Office (CSO), Sir Harry Campion, was due to retire and thought was being given to his replacement. Claus was seconded for three years by the LSE to the Civil Service, where his existing wide experience of public affairs made him an ideal choice. Claus's move from the LSE to the Civil Service seemed natural because his existing experience with the Robbins Committee had demonstrated his capabilities, in particular the fact that he had been the architect of the formidable body of empirical evidence which successfully overcame the entrenched opposition which existed, in many quarters, to the recommendation of the Robbins Committee that the university system be expanded. This achievement would have made him particularly attractive to a government sympathetic to that recommendation. He therefore succeeded Sir Harry Campion.

When Claus moved to the Civil Service he actually had two distinct roles. He was head of the GSS, which was the professional grouping of government statisticians. He was also head of the CSO, which dealt principally with matters relating to the collection and publication of economic statistics. The CSO was under the wing of the Cabinet Office and, in that role, Claus reported to the Prime Minister. During some of his time in the post the Prime Minister was Harold Wilson who, as a fellow statistician, Claus felt to be generally supportive and understanding of the issues he was dealing with. Informally, Claus also saw himself as a general statistical advisor to the government.

The most complete account of Claus's time in, and views on, government service is expressed in his own words in his presidential address to

[1] The full report is available online at <http://www.educationengland.org.uk/documents/robbins/robbins1963.html> (accessed 31 January 2017); this does not include the appendices, some of which were published with the report and others as separate volumes by HMSO in 1963—Cmnd 2154.

the Royal Statistical Society. This address, entitled 'Statistics and public policy', was delivered on 7 November 1979 and published in the society's *Journal*, *Series A* the following year.[2] After briefly thanking those who elected him and making some reference to his earlier experiences, the bulk of the address is devoted to a wide-ranging account of the GSS. The timing of the address was ideal in that it was given shortly after he had moved to N. M. Rothschild and Sons but while the events of that time were still fresh in his memory. It is comprehensive in its coverage, lucid in its exposition and fully alive to both the successes and failures of his efforts.

The overriding impression which one gains is of the enormous organisational feat of managing what came to be a very large professional organisation (roughly 600 professional staff) and making it fit for the role which it was called upon to fulfil. This called for considerable talents of which only glimpses had been seen in his previous roles, though they must have been latent. Any final assessment of Claus's contribution to government statistics must focus on his ability to see things in a broad context and on his ability to fashion and direct others to achieve long-term objectives.

The titles of the main section headings of the address were 'Integrity', 'Quality', 'Organisation', 'Priorities' and 'Relations with the Public'. Under each heading he gave a penetrating analysis of his successes and failures. There is one area where he faced a problem which continued to exercise him for many years afterwards. This concerned the relative merits of a centralised and decentralised service. The business of government is carried out by separate departments each under the direction of a minister. At one extreme each department effectively could have its own statistical service answerable to its own head. At the other there would be a central statistical service, centrally managed. In practice many compromises are possible. In the United Kingdom there is, and was, a hybrid system but with the balance much in favour of a decentralised version. In a centralised system all statisticians are centrally recruited and managed, and this is certainly more convenient from the point of view of the head of the service. A decentralised service makes for a much closer link between statisticians and the departmental staff who are responsible for delivering government policies.

Within the service he was recognised as a good and considerate manager of staff. Claus was convinced that statisticians in the government should not simply be 'backroom boys' but needed to be outgoing and

[2]C. A. Moser, 'Statistics and public policy', *Journal of the Royal Statistical Society, Series A (General)*, 143 (1980), 1–32.

more 'extrovert'. They were to be participants rather than spectators in policy making. Accordingly, when invitations to speak were offered he despatched some of his senior staff to universities in an attempt to get that message across to potential recruits to the GSS. This was sometimes done through talks to those about to graduate (in the guise of seminars), which provided a ready-made vehicle.

Part of his role was to implement the proposals made by the House of Commons Estimates Committee, which involved the creation of the Business Statistics Office and of the Office of Population Censuses and Surveys (OPCS). The latter combined the Government Social Survey with the Registrar General's responsibility for large-scale censuses.

One of Claus's innovations was the introduction of the publication *Social Trends*. This first appeared in 1970, edited by his colleague Muriel Nissel at the CSO, and it has since been emulated elsewhere. This publication provides an annual picture, through tables and diagrams, of the state of society which complements that given by the older and more familiar economic series. Given the musical accomplishments of both the then Prime Minister (Edward Heath) and Claus, it was particularly appropriate that the publication should have been launched with a performance by the Amadeus String Quartet, whose second violin player was Siegmund Nissel, husband of Muriel.

The integrity of government figures is vital for the credibility of the whole enterprise. This requires that there should be no manipulation, however subtle, by those for whom the figures are produced. This has required, for example, that there shall be generally accepted fixed publication dates for all series. There were a number of occasions when the integrity of the service was threatened by the attempt to gain short-term advantage on the part of the government. On one oft-quoted occasion, Claus stood firm when it was suggested that the cost of some jumbo jets should be spread over several months rather than be recorded in the month in which purchase actually occurred. The effect of making the change would have had a beneficial effect on the Balance of Payments figures and might have affected the outcome of the imminent general election. It would be going too far to claim that Claus was alone in taking a stand against this but there is no doubting his resolve. He considered it essential that government statistics be above such things. That it was, and still is, reflects the leadership that Claus provided, and on more than one occasion such things became matters of resignation.

Earlier on, towards the end of his secondment, there was great government satisfaction with the progress that Claus had made in reorganising and

driving forward the work of government statistics, but it was clear that a longer period was needed to bring this promising start to fruition. The LSE was therefore approached and asked to consider whether the secondment might be extended for a further two-and-a-half years. There followed extensive discussions between the parties culminating in a meeting between the Prime Minister (Harold Wilson) and the Director of the LSE (Sir Walter Adams) at 10 Downing Street. The upshot of all this was that the LSE felt that it could not extend the period of leave, but it came up with a counter-proposal that Claus should resign from his Chair and that he would be appointed as a Visiting Professor at the School. Claus, himself, was torn in two directions, on the one hand by his loyalty to, and affection for, the School and on the other by his desire to continue with his work at the CSO. The proposal was finally agreed; Claus resigned his chair, became a full-time civil servant and a Visiting Professor at the LSE. The latter appointment was under the usual terms and conditions, but there was no fixed emolument and it ultimately came to an end in 1975. This appointment provided the opportunity for him to remain associated, in particular with the Higher Education Research Unit, but involved no fixed duties.

The School made a further attempt to bring Moser back when in 1971 it indicated that, under new University regulations, it was prepared to create a new Chair of Statistics specifically for Claus, beginning in the session 1972–3, but although this was attractive he declined on the grounds that there was much else that he wished to do in the Civil Service.

Rothschilds

In 1978 Claus left government service and joined Rothschild Bank, where he was Vice-Chairman from 1978 to 1984. When it was known that Claus was moving to the world of banking, one of his senior colleagues in the GSS wryly remarked that a suitable leaving present might be a book with some such title as *Teach Yourself Banking*. Claus, of course, brought his detailed first-hand knowledge of the workings of government as a considerable dowry to his new employer. The wisdom of Rothschild's decision to recruit Claus was evident in the part which he took in the bank's desire to be appointed as investment consultants to the government of Singapore. This was a tricky negotiation as three other financial institutions were believed to be competing for the consultancy. The instability of sterling around this time, among other things, had caused the government of

Singapore to think hard about the management of its reserves, many of which were held in sterling. Claus, together with two other members of Rothschild's staff, travelled to Singapore to be interviewed on the application. They had made several previous visits to obtain information. It so happened that Dr Goh Keng Swee, the Chairman of the Monetary Authority of Singapore, had been Moser's tutee when he had been a student at the LSE many years previously. They were close personal friends who shared an interest in music. However, this fact appeared to have counted for little in the negotiations. The interview consisted of two parts—the first was with Dr Goh and others and the second with the Prime Minister, Dr Lee Kuan Yew, who would make the final decision. For this, the last stage, the party was ushered into the Prime Minister's office and Claus calmed the nerves of his colleagues by remarking, rather breezily, that he had considerable experience of dealing with prime ministers. But all of this was to no avail in the searching questioning which followed. Dr Lee quickly exposed the fact that Claus lacked experience of investments. Nevertheless, in spite of any apprehension, Dr Goh later informed them that Rothschild's would be appointed for a trial period of six months.

Claus chaired the Economist Intelligence Unit from 1979 to 1983. This is a unit within the Economist Group which carries out research and publishes papers under contract, especially on matters of economic concern. Coming shortly after Claus's term as Director of the CSO there could hardly have been a stronger candidate for the job. He also chaired the *Economist* Board for a time.

Wadham College

In 1984 Claus made his final career move, this time to be Warden of Wadham College, Oxford, where he remained until his retirement in 1993. This was a return to the academic world but a very different one from that in which he began at the LSE many years before. He himself said that 'Of the various careers I've had, my nine years at Wadham have been the happiest of all. I love being with students and in the company of academics.' It was the academic environment in which he felt at home with its daily contact with scholars of all ages. As Warden it was his responsibility to chair meetings of the governing body, which he did with the benefit of many years' experience; however, he did not rely on past experience alone but, characteristically, on a sure foundation of knowledge based on prior

reading of the papers and consultation with the relevant officers of the College. Although he was also making a major contribution to the running of the Royal Opera House at this time, his effort was equitably apportioned between these two responsibilities. Weekends were, as throughout his life, packed with entertaining and various social activities. His musical talents contributed enormously to the musical life of a College which had not been previously conspicuous in that direction. He made no distinctions between people and this, particularly, appealed to undergraduates. He quickly saw the need for Wadham College to raise its endowment, and he was happy to use his many connections in the financial world as targets when the begging bowl went round. During this period his statistical activities were very much in the background, but while in Oxford he was enlisted to chair a University committee on the future of Statistics in the University. He also served a term as Pro-Vice-Chancellor between 1991 and 1993. He reached the retirement age for Wadham College in 1993 at the age of seventy.

Music

On the public scene Claus exercised his managerial abilities in the service of music. He was appointed to the Board of Directors of the Royal Opera House in 1965 and he succeeded to the Chairmanship in 1974. On the completion of that appointment in 1987, the Royal Opera House put on a performance of Mozart's *The Marriage of Figaro* in honour of Claus to mark his retirement as Chairman. His successor in the Opera House Chair was Sir John Sainsbury. During his working life, and beyond, he supported many musical causes.

Although never a professional musician, there were numerous occasions when Claus gave amateur piano performances at the LSE and elsewhere. It must have been rare for anyone to combine a lifelong interest in music with the personal and managerial expertise which Claus could bring to bear in any field. As well as his close link with the Royal Opera House, his musical interests also included membership of the governing body of Royal Academy of Music and of the BBC Music Advisory Committee, the London Symphony Orchestra where he was also a member of the Education Committee, and the Yehudi Menuhin School, among other similar activities.

It was mischievously claimed (incorrectly) that it was necessary to play a musical instrument to be employed in the Higher Education Research

Unit at the LSE. In later years, it was said, the transition occasioned by the replacement of Harold Wilson's government (with which Claus's sympathies lay) by Edward Heath's was made easier by the latter's musical accomplishments. In later years, when Claus appeared as a guest on the BBC's *Desert Island Discs*, it was clear that his main musical interest was in the great classical composers in the Bach and Mozart tradition.

Throughout his career he showed that blend of arts and sciences of which many have extolled but few have exemplified so completely.

Other activities

Claus Moser acquired many honorific posts during his career. Some were held in parallel with his main occupation, some began during his active career and carried on into retirement, and others were taken up during retirement. Any attempt at an exhaustive listing would almost certainly contain omissions; one estimate suggests that it may have run to upwards of forty. Almost all arose naturally from his professional and other interests linked to his background. Some have been mentioned already.

On retirement he became chairman of the British Museum Development Trust for ten years, where he oversaw the fundraising that culminated on 6 December 2000 in the opening of the award-winning Great Court, designed by Foster and Partners. After completing the term he became chairman emeritus.

He also supported Jewish and related charities, statistical and general academic interests, musical enterprises and organisations concerned with his wider general educational concerns. On the charitable side he was a trustee of the Paul Hamlyn Foundation and The Rayne Foundation.

Claus was president of the British Association for the Advancement of Science (as it was then known) in 1989–90 and he used his presidential address to show his concern for education at a very different level to university education with which he had been mainly involved. In his view young people in the UK were poorly prepared to take their place in the world of work and a radical examination of the situation was urgently needed. He proposed that a Royal Commission be set up to look into the matter, but this request was declined by the government. It is a measure of the seriousness of the situation that he, himself, in July 1991 set up a National Commission on Education under the auspices of the British Association to implement his proposal. The scope of the enquiry and the

depth of Claus's own concern is clearly set out in that Commission's terms of reference:

> In the light of the opportunities and challenges that will face the United Kingdom in a changing world over the next 25 years, to identify and consider key issues arising from: the definition of educational goals and assessment of the potential demand for education and training, in order to meet the economic and social requirements of the country and the needs and aspirations of people throughout their lives; and the definition of policies and practical means whereby opportunities to satisfy that demand may be made available for all, bearing in mind the implications for resources and institutions and for all of those involved in the education and training system; and to report its conclusions and recommendations in such manner as it may think fit.

It would be surprising if these words did not express Claus's own thinking on the subject.[3] He became chairman of the Basic Skills Agency in the late 1990s.

Throughout his life Claus continued to use, and to have used, the designation *statistician* in any list identifying his professional roots. Equally, he continued to be regarded as a statistician by the statistical community. It was therefore entirely appropriate, and expected, that he should become President of the Royal Statistical Society for the normal two-year term from 1978 to 1980. The President was not envisaged as a mere figurehead. He was expected to chair the monthly meetings of Council and its Executive and to chair the 'Ordinary' meeting which normally followed. At an Ordinary Meeting a paper was 'read' and discussed, first by a proposer and a seconder of the vote of thanks, followed by contributions from the floor. The other duty was to deliver a Presidential address. In Claus's case this was on 7 November 1979 and it was entitled 'Statistics and public policy'. After the usual formalities it was entirely devoted to a reflection on the author's still-recent experience of eleven years in the GSS (as covered elsewhere in this memoir). The vote of thanks was normally proposed by the President's predecessor in office, who in this case happened to be the Director of Statistics in the Home Office—who had been responsible to Claus. In particular from her we learnt that Claus's attempts to bring statisticians into the limelight had not always been met with universal approval outside GSS circles. There had been cynics who, privately, expressed the view that some statisticians would have been better left in the backroom!

[3] The report was National Commission on Education, *Learning to Succeed* (London, 1993).

Claus continued his association with the academic world throughout his life. He received honorary degrees from the Open University among others, but it was to Keele that he made his most lasting contribution and with which his name is particularly associated. He was Chancellor from 1986 until 2002. The Chancellor is the ceremonial head of the University and is normally most visible at the annual degree ceremonies. This was a considerable honour, but Claus took a particular interest in the progress of the social sciences at Keele. This is commemorated in the Claus Moser Research Centre building, which cost £3.5million and houses researchers in the humanities and social sciences; it was opened in the presence of Claus in 2008. A Claus Moser Memorial Lecture was given at the University on 4 May 2016 by John Pullinger, the current head of the GSS. This had the same title—'Statistics and public policy'—as Claus's original presidential address to the Royal Statistical Society in 1978, and described the indebtedness of Pullinger personally and the service generally to Claus's pioneering work, focusing particularly on the continuing need for integrity and quality in the data produced. Pullinger described the radical change over the last thirty to forty years in the ease with which data can now be produced.

As already noted, Claus was Pro-Vice-Chancellor of the University of Oxford from 1991 to 1993; another notable appointment in the academic sphere was as Chancellor of the Open University of Israel from 1994 to 2004. He was elected a Fellow of the British Academy in 1969.

Claus retained an affection for the LSE, in which he had developed his academic career. Apart from having served as a Visiting Professor soon after moving to government service, he became a member of its governing body from 1977 to 2006, and when that term came to an end he was accorded the new emeritus title along with other similarly eminent members retiring at the same time. The government of the LSE is now in the hands of a Court of no more than one hundred Governors each serving for a term of five years. As in most such institutions, much of the business is done through committees, and Claus took his share.

Soon after moving to the CSO in 1965 Claus was made a CBE, and he moved on to a knighthood (KCB) in 1973. He was elevated to the peerage in 2001. Tony Blair, the Prime Minister at the time, aimed to alter the composition of the House of Lords by introducing a new variety of peer who became known as 'People's Peers'. Inclusion in the approved list was to be by application and then selection. The initial list, published in 2001, consisted of fifteen names recommended to the Queen by the Prime Minister. There was some criticism that the list lacked the 'common touch'

since all had already achieved some distinction, but Claus was the oldest. The peerage was conferred and Claus became Baron Moser of Regent's Park in the Borough of Camden. Despite his left-leaning politics he sat on the cross-benches, from which he made many contributions drawing on his own experiences.

Assessment

There is no doubt that Claus was a remarkable man who could have succeeded in any of a number of spheres. His original status as a refugee is often used to illustrate how he overcame the initial disadvantages of his family's move to England. It is certainly true that the initial adaptation to the circumstances of life in a new country must have required a greater than average measure of adaptability. But he was admirably prepared for this by his near-perfect command of English, his innate natural ability and the ease with which he entered into personal relations on all fronts. This combination of personality and ability marked all stages of his career and contributed to his success in all of them. In the Civil Service, especially, he was able to develop that easy self-assurance which made for good relations with ministers and senior civil servants. This ability also stood him in good stead later in his career.

The move from the LSE to the Civil Service was the turning point in his career. At the LSE he had made steady progress up the academic ladder and was already a professor by the time he left. Had he remained it is probable that his career would have moved in a managerial direction, and he could easily have acquired any of the various offices which senior academics are often called upon to occupy. There is little doubt that he could have become a vice-chancellor of another university. Whether such a career would have offered the range and variety of challenges which came his way in the Civil Service and beyond is very doubtful. The LSE made strenuous efforts to reclaim his services at the end of his initial term in the GSS, but Claus courteously declined and subsequent history can vouch for the wisdom of this decision. His particular combination of talents needed a wider field for their fruitful exercise.

A gap in his knowledge, to which he often referred, was his lack of mathematics—as distinct from numeracy. As far as the latter was concerned, he was very keen on playing with numbers and he was highly numerate in all other senses of the word. He recognised the general

importance of a facility for manipulating and comprehending the meaning of numbers and regretted the lack of numeracy in contemporary society. However, there is no evidence that Claus had had any formal training in mathematics itself beyond school, and the BSc (Econ) degree at LSE certainly contained very little at that time. It was certainly possible to lecture in Statistics, as Claus did, without any systematic knowledge of mathematics. Yet it was clear that things were changing, as Claus discovered when the late Sir Maurice Kendall was appointed to the second chair of Statistics at the LSE. Sir Maurice was, perhaps, the leading UK figure in the world of mathematical statistics and the implications of this soon became clear. At the first annual meeting of the department following his appointment to agree the teaching programme, Sir Maurice said that he thought that all courses should be taken in rotation by all staff. It thus fell to Claus to teach a course on the Analysis of Variance and Covariance which would have had a substantial mathematical content. Claus protested, but was told that all members of the department should be able to teach any course. Accordingly, Claus took the course for three years, 'mugging up', as he put it, the material beforehand and escaping quickly at the end of each lecture lest any student should wish to ask a question! Years later, when they travelled the world together and both had left the LSE, Claus felt that he and Maurice had arrived at a degree of mutual understanding, but Sir Maurice evidently continued to see mathematical thinking as fundamental to life in general. Once, after seeing an opera by Handel together, Sir Maurice remarked that it was all rather trivial, and to prove his point he set the first chapter of his famous *Advanced Theory of Statistics* to music in the style of Handel. Claus dryly remarked that such a score might now be quite valuable, if it was still extant. This anecdote illustrates the fundamental division which was then becoming apparent in statistics between different ways of looking at the world, now almost forgotten. Claus was one of the survivors of that earlier way of looking at the subject and he remained acutely aware of this, as I was reminded when he brought the matter up at a lunch to celebrate his ninetieth birthday given by the Statistical Dinner Club. The conversation turned on whether the ideas of statistics were essentially mathematical. He did not denigrate the mathematical approach, as did some of his contemporaries, but recognised his own limitations in that direction. I was reminded of this in the 1970s when Lord Rothschild, his then boss, said that he wanted to learn some probability theory 'to keep his mind sharp'. Claus declined the invitation to be his tutor and sent him

to me instead, when Rothschild ascended, somewhat furtively, by a back stair of the St Clement's Building of the LSE for a weekly session.

To understand why lack of mathematics was sometimes a concern for some statisticians it is necessary to sketch some of the background to the development of the subject. In the beginning the subject of Statistics was primarily concerned with detecting patterns in social and economic data. Very often the data would be presented in tables or as time series and the statistician's job was to discern their meaning. Around the year 1900, in the wake of the Darwinian revolution, Karl Pearson and his colleagues at University College London were studying the patterns of variation displayed by populations of biological objects. These conformed to a variety of simple shapes which could be described by simple mathematical forms. A little later, statisticians turned their attention to inference from random samples. Probability theory, on which both developments depended, is a branch of mathematics. In such ways mathematics gained entry to statistics and modern mathematical statistics was born. This greatly enhanced the power and scope of what had been largely a descriptive science. In various ways, by the 1960s mathematical statistics became the dominant strand of the subject. One could do a great deal without any reference to real data and mathematicians did not hesitate to do this! This led to a cleavage in the subject which was sometimes (and inaccurately) described as between applied and theoretical statistics. To a large extent mathematics has now given way to computer science as the favoured tool for handling variation. In following the traditional terminology Claus declared himself to be, and was, an applied statistician. His knowledge of and facility with mathematics was very limited, as he frequently acknowledged. His strength lay in collecting, tabulating and interpreting the message conveyed by aggregate data without the necessity of much reference to mathematical theory.

Claus was firmly on the non-mathematical side of the great divide to which we have just referred, and this was evident in the section of his presidential address to the RSS entitled 'What kinds of statisticians?'. He referred to the fact that almost all recruits to the GSS had been trained in university departments of Statistics and were firmly based on the mathematical version of the subject. This left them ill prepared for the real world of government service which was firmly located near the more empirical part of the spectrum. Claus himself, in that address, had described Statistics as the 'science of doubt'—or, equivalently, as to do with 'chance and its measurement'. The nub of the problem lay in the fact that the doubt and uncertainty with which the government statistician

was concerned was much wider. The sort of uncertainty faced was broader than that on which mathematical statisticians, reared almost exclusively on probability theory, have habitually dealt. Claus's own solution, proposed in that address, was in the direction of grafting what was lacking onto existing courses, but perhaps he failed to see how deep-rooted the difficulty was. The problem has been ameliorated slightly since then because Computer Science has more recently posed a different but equal set of challenges to what the subject of Statistics actually is. In that ambiguity lies the inherent difficulty of locating Claus's true place within Statistics and his contribution to it.

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Claus met his future wife, Mary Oxlin, while they were both students at the LSE but they were not married until 1949. They had three children, Kath, Sue and Peter, all born in the 1950s. Claus loved spending time with his family, sharing walks on Sundays, music-making and holidays, and Mary played an invaluable and supportive role in very many aspects of his life. Mary is half Swiss and spent her early childhood in Arosa near Chur, Switzerland. Claus and the family went there on holiday every summer, inviting friends to join them in the chalet in the mountains where Mary grew up. It was while there on holiday that Claus had a stroke and died on 4 September 2015, aged ninety-two.

DAVID BARTHOLOMEW
Fellow of the Academy

Note. When writing about a man with such a wide range of abilities and accomplishments it is impossible to do him justice without drawing on the help of many friends and colleagues. Among those who have materially contributed to this memoir are Lord Richard Layard, Professor Howard Glennerster and, especially, Kath Moser, Claus's elder daughter. To them and all others not named I extend my warmest thanks.