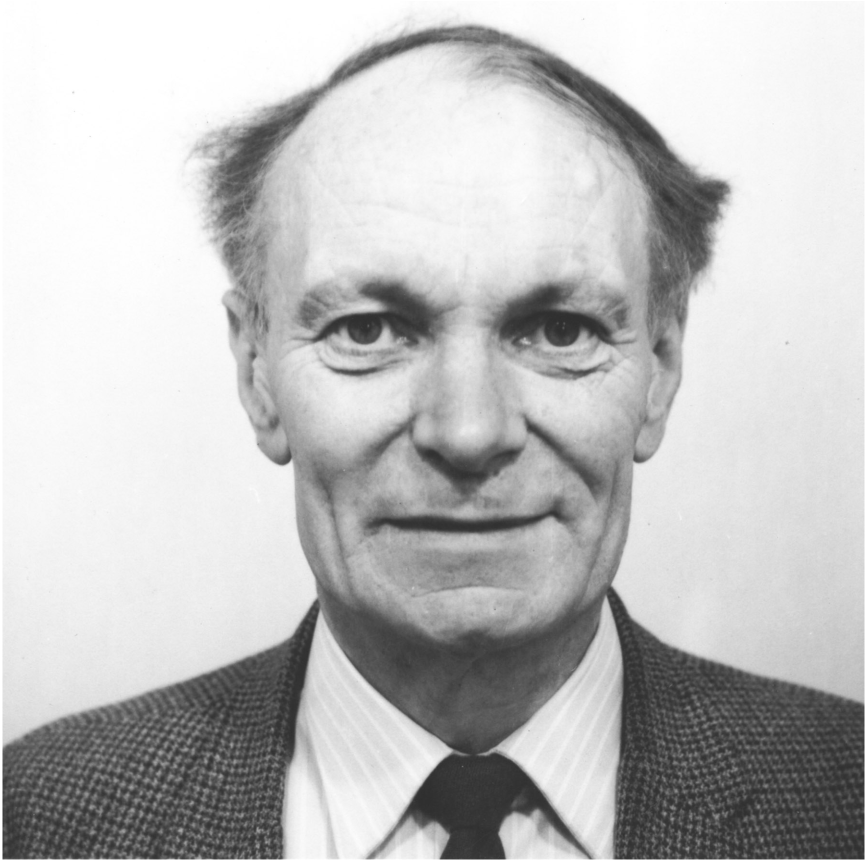

BRIAN REDDAWAY

William Brian Reddaway
1913–2002

I

PROFESSOR W. B. REDDAWAY, invariably known to friends and colleagues as Brian Reddaway, was an exceptional economist who had a huge influence on how economics in Cambridge has been taught and researched. He held leadership positions in the Faculty of Economics and Politics at Cambridge for twenty-five years, between 1955 and 1980. For nearly the first fifteen years he was Director of the Department of Applied Economics (DAE), succeeding Sir Richard Stone, the founding Director. The DAE was established after the Second World War on the initiative of J. M. Keynes. It was set up as the research arm of the Faculty of Economics and Politics, providing facilities for teaching staff to carry out applied economic and social investigations. In 1969, almost at the end of his tenure as DAE Director, Reddaway was elected to succeed James Meade in the Chair of Political Economy, the senior chair in economics in Cambridge. Reddaway held this chair until 1980, when he formally retired. He continued his association with the Faculty for many years after this, doing occasional lecture courses, or one-off lectures: he positively loved lecturing on applied economic subjects and helping younger colleagues with their research.

As is the custom in Cambridge's collegiate university structure, in addition to his successive university posts in the Faculty, which began in 1939 on his appointment as University Lecturer, he held a Fellowship at Clare College for sixty-four years (1938 to 2002). He took a very active part in college life, including college teaching and helping to manage the college's

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investments. It was acknowledged that he accomplished all these tasks extraordinarily well.

This commentary on the professional life and work of Brian Reddaway is written by a close colleague who regarded him as one of his valued mentors. My main purpose is to reflect on and to appraise Reddaway's legacy in relation to economics, to policy-making and to general social welfare. Often, Reddaway's references for his students or colleagues included a statement to the effect that it was his practice to tell nothing but the truth. The present memoir aims to do the same in its historical assessment of his career and his contributions.

In carrying out this task, I intend to focus on some key analytical issues and paradoxes relating to Reddaway's professional life as a teacher, scholar and Cambridge academic. First, anyone who has closely examined his career is struck by the paradox that, although he had enormous influence on economics in Cambridge and, through policy-making and advice, on the world outside, his impact on the economics profession itself in the narrow academic sense of the term was much smaller, particularly outside the UK.[1] This is in sharp contrast to Stone, who, it is generally recognised, had very little impact on the Economics Faculty in Cambridge, but had a large following outside Cambridge and won the Nobel Memorial Prize for Economics in 1984.

A second paradox in Reddaway's career is that politically he was a liberal who believed in the market economy and advised the Confederation of British Industry. Yet he was invited by the Cambridge Political Economy Society, a group of Cambridge left-wing economists who in the late 1970s founded the *Cambridge Journal of Economics*, to become a patron of the journal. Reddaway not only accepted the invitation, but actively helped with the journal's work.

Thirdly, any discussion of Reddaway's professional career in Cambridge would be incomplete without recognising his exceptional commitment to teaching and examining students, and taking the democratic governance of the university seriously, devoting substantial time and effort to it. Reddaway's Socratic approach to teaching sprang from and contributed to the Cambridge oral tradition. It had a profound influence on generations of students who went on to shape the culture of economic debate in Britain, and in international organisations.[2]

[1] The 'narrow' economics profession may for practical purposes be regarded as being represented by academic economists working in universities and research institutions.

[2] Michael Posner, obituary of W. B. Reddaway, *The Guardian*, 5 Sept. 2002.

II

My professional and personal association with Brian Reddaway goes back more than forty years, to January 1963, when I came to Cambridge from the University of California, Berkeley, to work with Robin Marris at the DAE on managerial capitalism. I was still a graduate student in Berkeley and had worked as Marris's research assistant when he was a visiting professor there a year earlier. At the DAE Reddaway had just started a project on UK corporate finance and, because of the obvious synergy of this project with that of Marris's, it was decided that the two should be run jointly by Marris and Reddaway. Reddaway, at that time and for many years afterwards, wrote, under the nom de plume 'the Academic Investor', a highly regarded column for the *Investors' Chronicle* in which he regularly reported on the results of his college's portfolio, which he helped to organise. This led to his keen interest in corporate finance and behaviour and hence in these research projects.

There was a tempestuous start to my association with Reddaway when I started work on the project. One afternoon in the DAE common room we embarked on a serious and noisy disagreement about econometrics and time series analysis. Reddaway was scathing about the regression analysis of economic time series, as it led to spurious correlations, for reasons which are much better understood today than they were then. I provided what I thought was a spirited defence of the textbook model of doing such regressions, which at Berkeley I had been taught was an adequate approach to the problem.[3] Reddaway was not at all convinced, but never held my wrong-headedness against me, regarding it as an honest difference of opinion. What was remarkable about this exchange was that it took place between a graduate student and a highly distinguished economist for whom academic hierarchy seemed to have no relevance. Indeed one of Reddaway's characteristic traits throughout his professional life was that he was interested only in the validity or otherwise of the argument being made, rather than the formal status of the person making it. This did not always endear him to his senior colleagues, whose sometimes feeble arguments might be summarily rejected in public. Brian Reddaway

[3] See Ron Smith, 'The Development of Econometric Methods at the Department of Applied Economics' in I. Begg and B. Henry, *Applied Economics and Public Policy* (Department of Applied Economics Occasional Paper (Cambridge, 1998). Interestingly, as Smith notes, the textbook model referred to above came from the DAE itself during Stone's period as Director. It is associated with the work of Durbin, Watson, Cochrane and Orcutt, all of whom worked at the Department under Stone.

was a blunt person and habitually called a spade a spade, though neither with malice nor with any intention of point scoring.

Born on 8 January 1913, the son of W. F. Reddaway and Kate Waterland, née Sill, Brian Reddaway came from an academic Cambridge family with firm roots in the university. His father was a historian and a Fellow of King's and the first Censor (Head) of Fitzwilliam House, before that institution became a full-fledged college. He wrote extensively on countries around the Baltic, Russia, Poland and Scandinavia. This academic background gave the younger Reddaway total self-confidence, which later led him to become the scourge of the central bureaucracy in the university. He was extremely critical of administrative inefficiency and regarded administrators as the servants of the dons and students, rather than their masters. Many senior university administrators found themselves at the receiving end of his sharp comments.

Reddaway was educated at King's College School from 1920 to 1924, at Lydgate House (a boarding school at Hunstanton in Norfolk) from 1924 to 1926 and at Oundle from 1926 to 1931. He was a brilliant student and in 1931 won a scholarship to read Natural Sciences at King's College, Cambridge. In the event he was advised to do Mathematics in the first year and Natural Sciences in the last two years. However, after obtaining a First in Part 1 Mathematics, he opted for Economics instead, because of his strong concern with mass unemployment and widespread poverty in the 1930s. He had the great fortune of being personally supervised by Richard Kahn and John Maynard Keynes, neither of whom he disappointed. He visited Russia with his father soon after his graduation, and used this opportunity to do independent research on the Russian financial system (with the blessing of his prospective employer—the Bank of England). An essay based on this material won him the university's coveted Adam Smith prize, and on Keynes' recommendation was subsequently published in 1935 as *The Russian Financial System* by Macmillan. A book that I understand continued to be included in LSE reading lists for more than three decades.

III

After a short stint at the Bank of England, where the structure seemed to provide scant prospects for early promotion, Reddaway worked for two years in Australia, Keynes having recommended him to L. F. Giblin, Professor at the University of Melbourne and also a recently appointed non-executive Director of the Australian central bank. Reddaway apparently spent two happy and productive years as a tutor at the University of Melbourne while also assisting Giblin at the central bank.[4]

Reddaway quickly made his mark on the Australian scene. First, he published a review of Keynes's *The General Theory of Employment, Interest and Money* (London, 1936) that is regarded as a classic interpretation of the book.[5] Second, he took a prominent part in the ongoing debate on wage levels in Australia. The Australian government at that time favoured wage cuts in order to enhance the competitiveness of the country's mining and manufacturing industries. The trade unions were naturally opposed. Reddaway testified in the Commonwealth Arbitration Court in favour of the trade union position that real wages should be raised rather than cut. The Court accepted almost fully the 23-year-old Englishman's recommendations and the resulting wage award lasted fifteen years, and came to be called the Reddawage. In 1938 Reddaway returned to England to a Fellowship at Clare College. Nevertheless, throughout his career he maintained his early connection with Australia and visited the country many times.

Brian Reddaway and Barbara Bennet's marriage in 1939 generated an environment in which both blossomed and which was highly supportive of their offspring and younger generations. The Reddaways had four children, Peter, Lawrence, Stewart and Jacky. Since Brian's death (Barbara died earlier in 1996), they have provided us with their reflections (as well as those of others) on their parents and on their family life together which suggest that they were a happy, cohesive family in which both parents fully participated.[6] The Reddaways had a modest, almost abstemious lifestyle and it seems that their savings were spent on family holidays that were quite frequent. Stewart observed that 'Dad provided us with a loving and secure home background. This was based on what he did for us, on his relationships with us and on the very happy marriage between him and mum.' Daughter Jacky notes that their parents formed 'a remarkable partnership which provided great comfort and stimulation to their family . . .'. Peter writes:

[4] Lawrence Reddaway (ed.), *William Brian Reddaway, 8 January 1913–23 July 2002 and Barbara Augusta Reddaway, 15 August 1912–15 September 1996, Memories* (Cambridge, 2003).

[5] *The Economic Record*, 12 (1936), 28–36.

[6] The rest of this section is based on an excellent collection of *Memories* of Brian and Barbara Reddaway by their children, friends and associates from all over the world, put together and edited by Lawrence Reddaway (see above, n. 4). The quotations all come from this booklet.

> Dad was an undemonstrative, but loyal family man. Although Mum initiated virtually all family and social events she always got his full support. He pulled the carrots, picked the gooseberries, tidied the flowerbeds, mowed the lawn, laid the table, poured the gin and tonic and carved the roast chicken. He then contributed in lively style to the conversation, throwing in, often with a theatrical flourish, stories from his repertoire of some twenty wellworn favourites.

Peter notes that in general he brought up his children more by example than instruction.

Lawrence says that Reddaway was 'thoroughly English by both birth and habit but thoroughly international in his outlook . . .', yet he lived all his life in Cambridge. The Reddaway family had lived in the city for one hundred and twenty years, ever since Reddaway's father entered the Leys School. From this base in Cambridge, Brian and Barbara travelled widely and spent time in several European and Third-World countries as well as the US and Australia. He was evidently a good linguist and, apart from German and French, he especially learnt Spanish before going to Argentina to advise the government.

In their middle age, the Reddaways devoted a great deal of their time and effort to their extended family. As well as their four children, Brian was survived by nine grandchildren and one great grandchild. Brian and Barbara had by their grandchildren's accounts extremely good relations with the second generation.

Reddaway's prodigious research output and contributions to the work of the Faculty, University and governments in the UK and abroad, owed a tremendous amount to Barbara. Her social skills were very helpful in softening his critical, and often abrupt, way of interacting with colleagues, students and friends. Friends and research students from around the world were always welcome at their Cambridge home. I have the most wonderful memories of Barbara's cheerfulness and gaiety and remember with pleasure her remarks congratulating me on my promotion to a personal Chair in Cambridge: 'The whole world will rejoice at the news of your Chair.'

IV

Turning to Reddaway's research contributions, he was certainly not an orthodox or a traditional economist. By this I mean that he was much less concerned with economic doctrine than with solving practical problems. The solutions to these problems inevitably required theoretical understanding, and, when the theory was not available, he had to craft it himself, as we shall see in the case of his Foreign Direct Investment (FDI) study. Most importantly, for him quantification was essential to the examination of economic phenomena, particularly if the aim was to draw policy conclusions. He had a distinct methodology and approach to economics. He himself suggests in his autobiographical entry in *Who's Who in Economics* (3rd edn., Cheltenham, 1999) that his most important scholarly contributions included two large projects—one on the effects on the UK balance of payments of direct investment overseas by UK companies, and the other on the then recently introduced selective employment tax—both of which he undertook at the DAE in the 1960s. These projects involved large survey teams and raised important conceptual, statistical and data questions. In tackling these he combined great imagination with exemplary economic sense. The results were reported in 1967 and 1968 (FDI),[7] and 1970 and 1973 (Selective Employment Tax).[8]

In order to indicate the nature and qualities of Reddaway's research, two areas will be reviewed in some detail below: his work on foreign direct investment (FDI), and on Indian planning and economic development.[9] The commentary will focus not so much on the specific conclusions reached, but on the methods used and how the research was done. These studies also bring out Reddaway's attitude towards (a) the role of the government and (b) the use of mathematics and econometrics. Both (a) and (b) in turn are helpful in clarifying his approach to economic research. He himself summed up his way of doing applied economics as follows:

> I have attempted to tackle *practical* problems, whether on full employment, growth, underdeveloped economies, inflation, the effects of direct investment overseas, the selective employment tax, or the investment of portfolios. To do so, I have sought to combine theory with realistic data and to look for the factors which are quantitatively important, rather than those which are intellectually stimulating. I have tried to be pragmatic in my choice of methods for tackling problems and to be clear about the alternative position with which comparisons are effectively being made (and to be sure that it is a meaningful and consistent one). Favourite slogan for pupils and research colleagues: 'It

[7] *Effects of UK Direct Investment Overseas—Interim Report* (Cambridge, 1967); *Final Report* (Cambridge, 1968).

[8] *Effects of Selective Employment Tax,* 2 vols. (Cambridge, 1970, 1973).

[9] Other notable areas of his research, which will not be covered here, include labour markets, structural change, demography, economic growth and contributions to economic history. See further W. B. Reddaway, 'Recollections of a Lucky Economist', *BNL Quarterly Review*, 192 (March 1995) and G. C. Harcourt, 'Reddaway, William, Brian 1913–2002', in Donald Rutherford (ed.), *The Biographical Dictionary of British Economists*, *2, K–Z* (Bristol, 2004), pp. 998–1003.

> is better to be roughly right than to be precisely wrong (or irrelevant).' (Reddaway, *Who's Who in Economics*, 1999, p. 932, emphasis in the original)

In other words, in the real world, even though data are scarce, it is better to have rough orders of magnitude than none at all, in order not to operate entirely in the realm of abstraction. If data (or theory) did not exist, Reddaway's method was to use surveys to ask people for the information. If existing theory was inadequate, he would attempt to extend it to fill the gaps. However, the latter was not his prime aim. Colleagues recall him referring to theory as 'talky talk'.

V

These attributes of Reddaway's research methods are illustrated by the FDI study, which raises complex issues of applied economic analysis. Moreover, although the context today is very different, the subject itself is even more important now than it was then.[10] The terms of reference for the FDI exercise were 'to study the effects of direct outward private investment on the United Kingdom balance of payments and on the United Kingdom economy generally'.[11] There were very few published statistics available on the subject and Reddaway and his colleagues had to use extensive survey data to obtain the information at company level needed for this research. At the outset, Reddaway set out the issues as well as his basic methodology in non-technical and non-mathematical, but nonetheless rigorous, economic terms. He identified the gaps in information and indicated how they would be filled in the course of the research. He noted:

> We live nowadays in a managed economy. It follows that *any* question in macro-economics can be answered only on specified assumptions about the Government's policy (and powers) in managing the economy. Strictly speaking, there are as many answers as there are varieties of assumptions which one thinks it useful to make. . . . There is no single 'other things being equal' which it is *clearly* right to assume.[12]

[10] Today, it is not only the government and the CBI who are interested in such research, but even more so the workers who fear job losses from overseas investment by advanced country corporations (see further A. Singh, 'Globalisation and the Regulation of FDI: New Proposals from the European Community and Japan', *Contributions to Political Economy*, 24:1 (Aug. 2005), 99–121.

[11] *Effects of UK Direct Investment Overseas—Interim Report*, p. 15.

[12] Ibid., p. 167. Emphasis in original.

The simplifying, but plausible, assumptions he outlined about the government's role in relation to the basic analysis of the effects of a marginal increase in overseas investment (FDI) by British companies, included the following:

a) The government's major objective is to secure a level of total demand for the output of British goods and services which gives 'full employment', and in the main it is successful.

b) At times of balance of payments crisis this objective has to be (and is) subordinated to 'the defence of sterling'. . . ..

c) In striving for (a) the Government operates on the internal components of demand . . . and leaves exports and imports free from direct manipulation; the exchange rate is held constant.[13]

Reddaway further suggests that the effects of FDI can be assessed only on the basis of comparisons between what actually happened and what might otherwise have happened. He argues that this raises three kinds of problem:

a) What sort of assumptions should be made about the nature of the alternative position?

b) How can those assumptions be translated into figures?

c) How can these figures be used to answer the really important questions?[14]

Reddaway proposed that, on these assumptions, together with his carefully set out counter-factual (what would have happened otherwise), if an extra £100 million of overseas direct investment occurred in a particular year, the effects on the UK economy might be summarised as follows:

i) There are x million pounds additional exports—and we hope to find x.

ii) x million pounds *less* is spent on home investment in marginal developments.

iii) The levels of employment, consumption, imports and national income are unaffected in that year.

iv) (100 − x) million pounds of additional overseas debt is incurred (or portfolio investment may be reduced, or reserves used).[15]

Much of the information needed for Reddaway's enquiry had to come from the British companies that normally undertook FDI. He noted that:

[13] Ibid., p. 168.
[14] Ibid., p. 86.
[15] Ibid., pp. 169–70.

> we realized at an early stage that we were engaged in a difficult pioneering process. . . . The project would need to be an exercise in co-operation, with personal contact between the research team and company representatives playing a very important role.[16]

The survey indeed included difficult questions, some of a counter-factual and hypothetical kind, which company officials were not easily able to answer without help from the research team. Reddaway therefore placed responsibility for deciding on final figures for the research project on the researchers rather than on the companies, because the former were familiar with the logic of the problem and had also accumulated experience from interviewing a number of companies in the sample.

This detailed description of Reddaway's approach to the FDI research indicates important differences between his methods and those conventionally used in such analyses. The first is his use of plain English (instead of mathematical equations) to set out from first principles the basic methodology to be used. Second, though they were elementary, the statistical methods employed in the FDI study were in my judgement wholly appropriate to the nature of the economic problem and the available statistical data. A conventional study would have used multiple regression equations and employed statistical significance tests to draw inferences about the population. In Reddaway's view, these were often misleading, an issue that is discussed below. Third, he regarded assumptions made about the role of government to be critical in applied economic analysis of real world problems. (This issue is discussed further from a theoretical perspective in section VII.) Finally, contrary to the prejudice in the profession against interviewing business people (which basically still prevails today), Reddaway's basic analysis of the effects of FDI was based on survey data derived from business people's answers. He not only valued their answers but encouraged close cooperation between them and members of his research team. Reddaway's approach to the last point is now gaining ground, at least in business schools. In view of the dearth of appropriate official data in many fields, survey data have become increasingly important in economic research.[17]

[16] *Effects of UK Direct Investment Overseas—Interim Report*, p. 141.

[17] Professor John Toye has pointed out to me that Reddaway did not always maintain such high standards in his writings. In his *Economics of a Declining Population* (London, 1939), he took at face value the Enid Charles projections of a fast declining UK population. Reddaway's response to this lapse was that everybody at the time (Keynes, Meade, Joan Robinson) accepted these demographic projections. As Toye rightly notes, this study does not fit in with the Reddaway reputation 'for thinking things out from first principles and for seeking "to combine theory with realistic data", which characterises most of his work.' See also above, n. 8.

VI

Reddaway's book *The Development of the Indian Economy* (London 1962) is a highly unusual but a very important contribution to studies of planning and economic development. The book won high esteem from most (but not all) scholars in India and abroad. Despite very changed circumstances, its messages continue to be highly relevant for India and many other countries. The book arose from an Indian Planning Commission request to Reddaway to assess the consistency and viability of their recently formulated Third Five Year Plan.[18] From the start, he noted that although Indian plans did not have to be as comprehensive as Soviet five-year plans, the Third Plan nevertheless required more detailed elaboration to be useful as a practical planning instrument. Reddaway's approach was to examine the extent to which the plan was consistent with the available foreign exchange and the resources available for internal investment for each year, and the results were incorporated in the revised Third Plan. Apart from difficulties relating to the consistency of the Plan, Reddaway was also concerned that the Plan document should be drafted and presented in a way that made it credible, so that it could generate the necessary support and action.

The book drew a sharply critical article in *Oxford Economic Papers* (15:3 (Nov. 1963), 308–17) from a leading Indian economist, Professor Padma Desai. In response, in the same issue of the journal, the author vigorously defended his position. ('The Development of the Indian Economy. The Objects of the Exercise Restated', ibid., 318–32). Desai argued that the book did not set out a fully specified planning model so that it was difficult to judge whether the plan was efficient or not. She also thought that, from the information given in the book, the model was under-determined, i.e. the number of variables to be determined was greater than the number of equations. She further expressed irritation over the fact that Reddaway had not bothered to specify his model in terms of equations, which she regarded as essential to understanding the underlying economic and statistical analysis.

In response, Reddaway observed:

> I saw, and still see, no advantage in expressing the reasoning in the form of mathematical equations. Such equations are a useful device where there is a great deal of *mutual* dependence of variables, because a verbal description cannot then easily show the interactions and the process of mutual determination;

[18] Reddaway visited the Commission in 1959–60 on sabbatical leave from Cambridge.

> moreover, it is then very laborious to arrive at the solutions which fit the conditions, except by some mathematical process analogous to the solution of simultaneous equations; and one might fall into the trap of not realizing that the system was under-determined, and arriving by trial and error at a set of figures which fulfilled the conditions but had no superiority over many other sets which would also do so.[19]

Reddaway went on to explain the limited focus of his exercise. The text of his book made it clear that he was not providing a model for the Third Plan, but only checking the viability of the plan formulated by the Commission. He also argued that his model was not underdetermined.

As is clear from the quotation above, Reddaway was fully aware of the advantages of the use of mathematics for expository purposes in certain situations, but also thought that a number of interactions between variables in the real world did not fit easily into formal equations. He was certainly no mathematical ignoramus, having obtained a first class in Mathematics Part I, as noted earlier. My own experience is that he was not hostile to the use of mathematics in empirical analysis provided it gave added clarity or substance to the argument. My book on takeovers included a chapter on the methodology of discriminant analysis and its relationship to other multi-variate methods. The discussion was in terms of matrix algebra.[20] Reddaway was extremely supportive and in fact helped me correct some errors that mathematical colleagues had missed. Also, it is not generally known that he played a key role in the appointment of Frank Hahn, a mathematical economist, to an economics chair in Cambridge.

VII

Reddaway's work on Indian planning naturally raises questions about his attitude towards planning in general, and more broadly his views on the role of government in advanced and developing countries. Although

[19] 'The Development of the Indian Economy. The Objects of the Exercise Restated', *Oxford Economic Papers*, 15:3 (Nov.), 326. Reddaway made a similar point in his 1936 review of Keynes's *General Theory*. He was critical of Keynes's exposition with respect to the mutual determination of savings, investment, income and rate of interest. Although he sympathised with Keynes's strictures about the spurious air of precision introduced by too much mathematics, he nevertheless felt that it was difficult to express in words the solution to a system of simultaneous equations. A shorthand equation system would have been much more useful.

[20] A. Singh, *Takeovers: Their Relevance to the Stock Market and the Theory of the Firm* (Cambridge, 1971).

politically a liberal, believing, as did Keynes, that resource allocation should by and large be left to the market, he thought that social welfare could often be improved by government action. During the Second World War Reddaway was seconded to the Board of Trade where he worked as Chief Statistician. In that capacity he helped to design the clothes rationing system and also among many other things, helped notably to improve the UK indices of industrial production and consumer prices.

Reddaway's attitude towards government intervention was greatly influenced by this wartime experience. At that time, among the government economists, Reddaway was regarded as being very much on the interventionist side. The statisticians at the Board of Trade were half-jokingly nick-named the 'Gosplanners' because of their interventionist outlook. In contrast, other government economists, notably James Meade and John Maynard Keynes, were called 'thermostaters', indicating that they believed in limiting government intervention, to macroeconomic policy to ensure full employment. In this view, microeconomics should entirely be the sphere of private households and firms. Reddaway was a pragmatic economist and a problem solver par excellence. These attributes, as well as his wartime experience, led him to regard the government as part of the solution rather than the problem. Indeed he took a very active part in government activity and policy making on various occasions. Reddaway served the UK and other national governments and the international community in a number of different ways, making notable contributions to the work of each.[21]

Reddaway's expertise was also used in a number of British colonies to construct indices of retail prices, which were often socially sensitive. Reddaway was evidently able to carry out these technical tasks well because he was aware of their social dimensions, and was willing to consult with the relevant groups and build a social consensus. He thereby avoided the social disruption which often followed the introduction of new price indices.[22] After the war Reddaway served on Royal Commissions and equivalent bodies and high-level government committees in the UK, Australia and a number of developing countries. He also acted as Director of the Research Division of the Organization for European Economic Cooperation (OEEC), the body implementing the Marshall Plan which subsequently became the Organization for Economic Cooperation and Development (OECD).

[21] I owe these points to Professor John Toye.

[22] Reddaway, 'Recollections of a Lucky Economist'; Obituary in *The Times*, 2 Aug. 2002.

In his role as member of the UK Prices and Incomes Board, and of the State of Victoria Liquor Board in Australia, Reddaway was perhaps ahead of his time, in that he took very serious account of the prevailing administrative and customary social arrangements, how their operation affected outcomes and how at the policy level such arrangements could be improved.

Similarly, in his review of Keynes's *General Theory*, mentioned earlier in a different context, Reddaway's critical remarks concerning the omission of the institutional factors which constrain economic agents, were also ahead of their time. In a notable passage, Reddaway wrote:

> The logic of the argument would be improved if the rate of interest were not so frequently used to represent the cost of raising capital; particularly in Australia the other elements, such as quantitative control of credit, are often far more important, and the rates applicable to different industries and borrowers may move differently for institutional reasons. (p. 107)

An important theoretical contribution, for which he does not always receive due credit, is his explicit introduction of the role of government into Keynesian analysis. Reddaway, and others who had reviewed *The General Theory* when it was first published, were asked to revisit their reviews and comment on them in the light of subsequent events. He responded with a whole new article, which makes an important contribution to Keynesian theory. He confessed that in his 1936 review he had been insufficiently critical of the way the role of government had been presented in *The General Theory*. He considered that with the big increase in the 'size of government' in the post-Second World War period, in many industrial countries, the government's consumption and investment behaviour was increasingly central to the workings of the modern economy. However this was not necessarily subject to the same considerations as those that influence corporate and household behaviour. Reddaway therefore suggested that the government's savings and investment functions require separate treatment.[23]

This theoretical perspective on the government's role in the economy has serious implications for applied economic work. Reddaway argued that, unlike Keynes in *The General Theory,* who in effect assumed that fiscal policy was neutral, in the post-Second World War economy in which government expenditure was relatively high, it was not legitimate to assume that fiscal policy would necessarily be distributionally neutral.

[23] 'Keynesian Analysis and a Mixed Economy', in Robert Lekachman (ed.), *Keynes' General Theory, Reports of Three Decades* (London and New York, 1964), pp. 108–23.

Each government was likely to have an agenda of its own and to use changes in taxation and expenditure to achieve social goals such as full employment, price stability and enhanced social welfare. Hence, it was necessary to take into account the detailed macroeconomic assumptions associated with its monetary and fiscal policies.

These points were fully taken on board in Reddaway's own empirical work, as we saw in our discussion of his analysis of the effects of FDI.

VIII

I turn now to the question of Reddaway's legacy and the nature of his influence inside and beyond Cambridge, during his long period of leadership in the faculty. Reddaway exercised intellectual influence on the 'narrow' academic economics profession, as defined earlier, as well as on the broader public, through a number of different channels. First and foremost, he led by example and over time his own research, including that described above, became more widely known and increasingly influential. Secondly Reddaway's influence came from the work of the DAE, where he was a hands-on director. Thirdly, and very importantly, Cambridge students trained in 'Reddaway economics' spread his approach to the City, the government, the media and other places where they went to work. Posner noted that this led to an improvement in the level of economic comment in the UK.[24]

Reddaway's assumption of the directorship of the DAE in 1955, on Stone's appointment to his chair, led to a decisive change in the department's research agenda. Under Stone's leadership the DAE had built up an international reputation as an outstanding centre for research in econometric theory. Stone's was a hard act to follow, but Reddaway did so with great energy and total conviction. He changed the direction of the department's research towards applied economics and economic policy.

Under his leadership in the 1960s the DAE was a vibrant and exciting place, which was generally regarded as one of the world's leading institutions for applied economic research. Reddaway, as many observers have noted, was in his element as the director.[25] He was a liberal academic in the best sense of the term and let a hundred flowers bloom. The DAE hosted projects on a wide range of subjects, notably including economic

[24] Obituary in *The Guardian*, 5 Sept. 2002.
[25] See for example, G. Whittington, 'Professor W. B. Reddaway', unpublished MS, 2002.

history, corporate finance, labour markets, regional economies and economic sociology, to each of which he himself made significant contributions. Reddaway provided autonomy to the investigators, but they had to perform to his high intellectual and critical standards. He was unstinting in his help when a project, for whatever reason, got into difficulties or an investigator sought assistance.

In my view, one reason why the department was so successful at this time was that it had under the same roof economists with effectively two different approaches to applied economics—that of Reddaway himself, as outlined above, and that of Stone, who continued to have a large research group in the department even after he resigned the directorship. However, by then, Stone's interest had shifted from theoretical to applied econometrics, and his new group worked mainly on the latter issues.[26] The Cambridge Growth Project, which he and Alan Brown co-directed at the DAE, was concerned with a real world question of applied economics and policy analysis—to formulate a comprehensive indicative plan for the UK economy. However, its methods differed from those of Reddaway and his collaborators, in that it made extensive use of applied econometrics.

I believe it was the unexpected synergy between the economists working on the growth project and those working in the non-econometric Reddaway paradigm which made the department *the* place to do applied economic research. The diversity of its research output was widely appreciated. The institution had a vigorous research culture and enormous self-confidence. Instead of being the research wing of the faculty, it acquired its own intellectual autonomy and became as well if not better known than the faculty, which still included among its teaching officers legendary figures like Richard Kahn, Joan Robinson, Nicholas Kaldor, James Meade, David Champernowne and Richard Goodwin.

Reddaway's influence on the 'narrow' academic economic profession, at least in the UK, was probably also advanced by his high public profile in the 1960s, with memberships of Royal Commissions and important government committees, his Fellowship of the British Academy in 1967, and his Presidency of the Royal Economic Society. Between 1971 and 1976, Reddaway also edited the *Economic Journal* together with Cambridge colleagues David Champernowne and Phyllis Deane. In that capacity he and his colleagues did influence the academic economic profession, not only in the UK but also in the USA and elsewhere, in the sense that unneces-

[26] R. Smith, 'The Development of Econometric Methods at the Department of Applied Economics'.

sary mathematics in articles was discouraged and papers were selected on their economic merit rather than because of the sophistication of the techniques used. Authors were encouraged to present their critical assumptions and their main results in plain English. However, after he and his co-editors left the journal, the academic profession followed the more mathematical US pattern. Some of the reasons for this are indicated in the following account.

Despite the modus vivendi between Reddaway and Stone and their respective research groups at the DAE, in the 1960s, Reddaway's own attitude to econometrics did not move far from that of Keynes's critique of Tinbergen.[27] The Cambridge Keynesian economists continued in general to be sceptical about the subject, on the familiar grounds that there are far too many relevant variables as well as possible interactions between them in the real world for econometrics to be able to cope with. The problem is compounded by frequent structural changes in economic relationships. However, at a more elementary level Reddaway was highly critical of normal econometric practice for not distinguishing statistical from economic significance. This is a simple point and one might think that it would apply only to a small minority of poor practitioners and would disappear over time.

Subsequent research, however, suggests that this does not seem to be the case. McCloskey and Ziliak found that of the 182 full-length papers published in the 1980s in the *American Economic Review*, 70 per cent did not distinguish between economic and statistical significance.[28] Many people have suggested that, as a result of the publication of this article itself in a leading journal, the situation must have greatly improved, as this is an elementary point which everybody can understand. But not according to Ziliak and McCloskey (2004). They find that in the 1990s, of 137 papers using a test of statistical significance in the *American Economic Review*, a huge 82 per cent 'mistook a merely statistically significant finding for an economically significant finding'. Their survey indicated that a large majority (81 per cent) believed that looking at the sign of a coefficient rather than its magnitude was adequate from an economic perspective.[29] The authors attribute this sorry state of affairs partly to the race to get articles published in academic journals, and to the belief

[27] 'Professor Tinbergen's Method', *Economic Journal*, 41 (1939), 558–68.

[28] D. N. McCloskey and S. T. Ziliak, 'The Standard Error of Regressions', *Journal of Economic Literature*, 34:1 (Mar. 1996), 97–114.

[29] S. T. Ziliak and D. N. McCloskey, 'Size Matters: The Standard Error of Regressions, in the *American Economic Review*', *Journal of Socio-Economics*, 33 (2004) 527–46.

of most contributors that journal referees like to see statistically significant positive results.[30] Such considerations may also have been responsible for the roll-back of Reddaway's way of doing economics from the pages of the *Economic Journal* after he ceased to co-edit it.

IX

Whether or not Reddaway had significant lasting influence on academic economics outside Cambridge, he certainly had an enormous impact within it. As Professor of Political Economy, he took a full part in teaching, examining, Tripos reform and examination reform. He was Chairman of the Faculty Board of Economics and Politics for most of the 1970s, when there were frequent clashes with the university's General Board, i.e. the central administration. He was an outstandingly good lecturer and teacher. He also understood that in order to influence teaching, one had to take a full part in examining. This is because, in the Cambridge system, the examination questions this year usually become next year's teaching questions for the students' tutorials. Reddaway was successful in the early 1960s in introducing a compulsory paper in economics and social statistics for most second-year students. This was however rather different from statistical papers in other universities. It did not require much statistical technique, but emphasised empirical analysis of economic issues; particular attention was given to national income accounting and to the balance of payments identities and statistics. Effectively, it was a paper in applied economics which had seemingly simple questions, but which would even today test Ph.D. students in economics at most universities. Reddaway's questions were carefully crafted to test the student's ability to use real-world data to illuminate economic issues.

These questions, which came to be known as 'Reddaway-type' questions, were very important to the teaching of economics in Cambridge. Normally one might not want to reproduce an examination paper in a Fellow's memoir, but in this case it forms a significant part of Reddaway's

[30] McCloskey and Ziliak's papers have recently been criticised by K. D. Hoover and M. V. Siegler, 'Sound and Fury: McCloskey and significance testing in economics', unpublished MS (2005). Even if one were to accept Hoover and Siegler's main point (and many will not) that significant tests have the merit of providing an assessment of the strength or weakness of the signal, nevertheless, McCloskey and Ziliak have performed a signal service by insisting on the distinction between economic and statistical significance in all areas of applied econometrics.

impact on Cambridge economics, and so is important to his intellectual legacy. He set the following typical question in the 1964 examination for second year undergraduates.

> You are employed by a business tycoon of uncertain politics, who got a II.1 in economics, but did not take the statistics paper. You find that he has gone away for the afternoon leaving the following note:
>
> 'I spent yesterday evening between two old College friends, T. Ory and L. Abour. Ory was trying to convince me that the economic record for 1959–63 reflected great credit on the government, because there had been good rises in all the following real terms:
>
> (a) The total production of goods and services.
> (b) Output per head in manufacturing.
> (c) Foreign trade.
> (d) Capital formation.
> (e) Personal consumption, both in total and per head of population.
>
> Moreover he insisted that there were other favourable features, such as:
>
> (i) Unemployment has been negligible.
> (ii) The growth in the quantity of money had been no greater than was justified by the rise in production.
> (iii) The rise in prices had slowed down to an easily tolerable pace.
> (iv) The balance of payments had on the whole been favourable.
> (v) The international position of the pound had been strengthened.
>
> On the other hand Abour maintained that in a progressive economy it was natural to have rises in all the items in Ory's list, and the real feature of the period was their smallness. As for his other points, Abour's rejoinder was as follows:
>
> 1. Unemployment had been rising throughout the period.
> 2. The movements in the quantity of money were, as such, of no real importance.
> 3. The rise in prices had been far from negligible, and had been kept down largely by the stability of import prices, for which even a Tory government could hardly claim the credit.
> 4. By the relevant tests, the balance of payments had been unfavourable, and indeed the Government had used its bad state as an argument for keeping down wages.
> 5. We ended the period with less reserves than the start, and greater liabilities.'
>
> Please get out the statistics which you consider relevant for judging the truth of the above matters, prepare tables and/or graphs in such a way that I can draw conclusions from them, and *write notes on what your own conclusions are*, indicating any places where these are of a subjective character (emphasis in original).

The students were provided with the National Income Blue Book and another government source book, *Economic Trends*. This was virtually the whole examination, to be completed within three hours.[31]

[31] I have abbreviated the question slightly.

Reddaway's academic legacy includes his commitment to intellectual rigour, and to the teaching and welfare of the students. He also believed in extending to them the democratic governance of the university. In the 1970s as Faculty Board chairman, he sided with the students and the majority in the faculty, in conflict with the central authorities over students' demands for representation and for changed methods of assessment. He was in the forefront of these struggles with all his formidable debating skills. Thus student participation in the university governance was another important aspect of Reddaway's legacy as a Cambridge academic.

This is perhaps best represented by an example—an extract from Reddaway's 'fly-sheet' responding to the one from the conservative dons on the issue of declassing of the Part I exam. It is classic Reddaway and is also worth reproducing at some length to indicate the kind of energy and commitment he brought to this task.

DECLASSING IN PART I OF THE ECONOMICS TRIPOS

(Reply to the *non-placet* fly-sheet)

I am circulating this fly-sheet as the representative of the Faculty Board of Economics and Politics who was appointed to reply to points made in the *non-placet* fly-sheet.

Attempts to confuse the issue

The fly-sheet confuses the issue by exaggerating greatly the importance of a very modest proposal. Its conclusion, 'Declassing signposts the road to uniform mediocrity', is a pure assertion, supported by no evidence whatever, and reached only by a series of leaps in the argument.

Let me give two examples of these leaps:

(a) Economics Part I is unusual in being taken after one year, and this fact weighed heavily with the Faculty Board in its decision to ask for declassing. Paragraph 2 of the fly-sheet actually draws attention to the one-year character of Economics Part I, where the authors kindly tell the Faculty Board how the subject should be taught. But paragraph 4 says 'If the Regent House acquiesce in these proposals we shall soon be told that the arguments for them apply with equal weight to other particular triposes.' This may of course be *said* by irresponsible people, but one can hardly imagine a *Faculty Board* using the argument to support a proposal to declass a two-year Part I; and the General Board would surely point out the *non-sequitur* if it did. The fly-sheet, however, proceeds as if the declassing of a single one-year Part I inevitably means the declassing of all Part I's.

(b) The same fourth paragraph also deftly slides the discussion from 'classing in Part I' to 'classing in examinations', and so implies (without of course producing any evidence) that declassing will spread inevitably to all Part II's as well.

> Thus a small experiment in the Economics Faculty is held out as a threat to the very survival of the system of classing in the university as a whole. I invite the members of the Regent House to judge the realism of this picture, remembering that declassing has *not* been proposed for Economics Part II, because the Faculty Board believes that classing in its final examination brings considerable net advantages.
>
> The more serious matter is, however, the unsupported assumption in the fly-sheet that declassing in Economics Part I will lead to 'uniform mediocrity' amongst the students. This type of 'argument' seems to me no more convincing than the objections to the Faculty Board's proposals about dissertations in 1972–73, which experience has now shown to be wholly erroneous: I am fortified in my scepticism by the fact that declassing of the first year examination in Oxford produced no such result. And indeed the fly-sheet itself seems quite uncertain about the reactions of candidates to declassing: paragraph 3 doubts whether the strain on Part I candidates would be reduced 'given the detailed information which would be supplied to the candidates' tutors'; paragraph 4 on the other hand implies that they will ignore their tutors' reactions and seek no more than 'uniform mediocrity' . . .
>
> W. B. Reddaway, March 1976.

In the event, these particular proposals were rejected by a vote of the university at large, but others were accepted, and Reddaway's role in helping to formulate and in arguing them was a key one.

X

One paradox mentioned at the beginning—why the left-wing economists of the *CJE* invited Reddaway to be their patron, and why he accepted—has an uncomplicated answer. Many younger heterodox economists in Cambridge were as dissatisfied with pure theory of the Cambridge kind (from Joan Robinson and her colleagues) as they were with the abstractions of general equilibrium theory. They regarded Reddaway's scepticism about economic theory and his emphasis on empirical and policy analysis as much more helpful. They also shared his distrust of the over-use of mathematical and econometric techniques. Reddaway for his part was not concerned with ideology, but with the fact that these people were doing economics in much the same way as he was doing it himself.

I hope I have managed to show the unorthodoxy of Reddaway's approach to economics. His own studies demonstrate that high quality research can be done without using mathematical equations and inferential econometrics. Like Keynes, Reddaway believed in using economic analysis to improve the world. He was an astringent intellectual who was not afraid to ask what he called 'idiot boy' questions and had the courage to say that the emperor frequently had no clothes. He had less time for economic theory than Keynes, but this was because he thought that Keynes had provided much of what macroeconomic theory was needed. What was required was not more beautiful abstractions, but answers, perhaps rough, to real-world questions.

Reddaway thus regarded economics as an empirical, evidence-based subject, which, through economic policy, should help improve the world. In his view, mathematics could sometimes help but, more often than not, it obfuscated economic reality. Currently, the academic economics profession is dominated by a priori theorising and deductive modelling. Greater attention to Reddaway's legacy to economics, to its research methods and to teaching would greatly contribute to rebalancing the subject.

XI

Brian Reddaway died in Cambridge after a short illness on 23 July 2002. After his retirement from the Chair of Political Economy at the University of Cambridge in 1980, he continued to be active as an economist and as economic adviser to many developing country governments, and gave lectures at the Faculty well into his 80s. He also frequently visited his extended family in Australia, the USA and elsewhere in the world during his post-retirement period. In September 2001, he visited Crowborough to meet his newborn great-granddaughter Bethan.

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