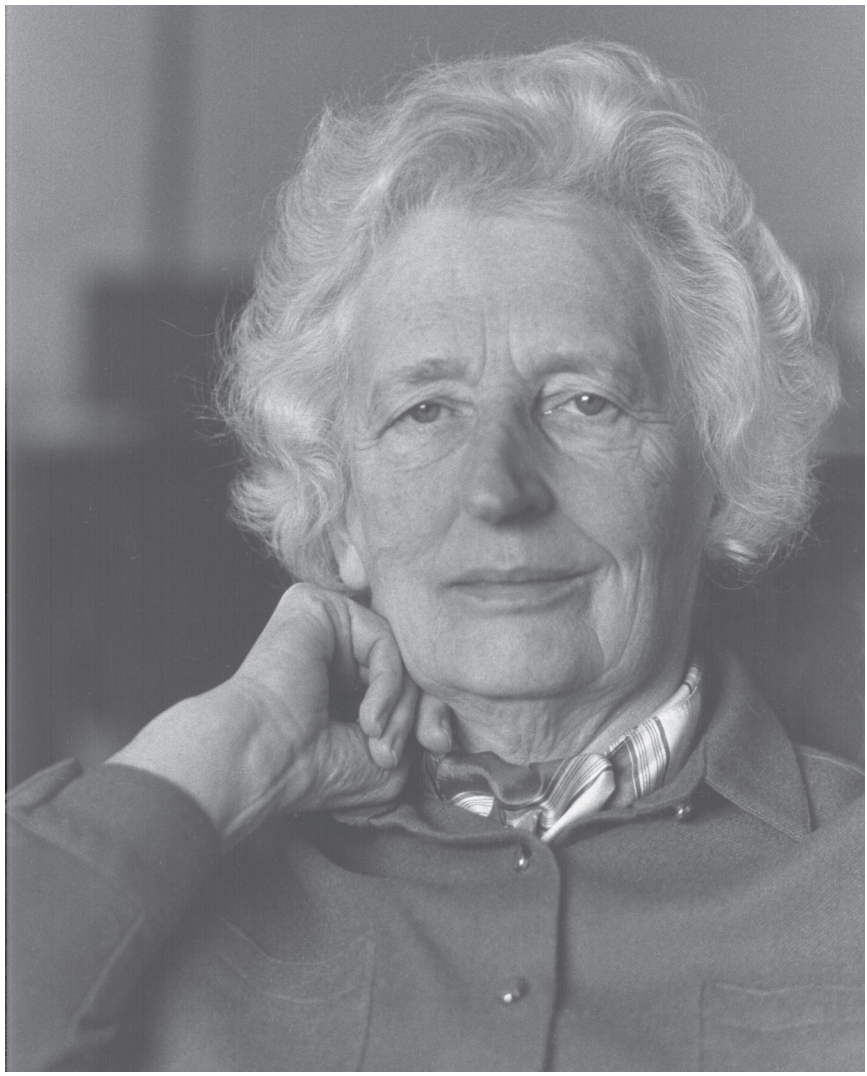

MARGARET GOWING *© Billett Potter*

Margaret Mary Gowing[1]
1921–1998

If some historians are born great, few acquire greatness. But some have greatness thrust upon them. This was certainly true of Margaret Mary Gowing, civil servant, archivist, and Britain's first official historian of the nuclear age. From modest origins, but armed with a good education, and favoured by the circumstances of Britain at war, Gowing met and seized opportunities that led her eventually to occupy a position of national prominence that few historians—and, at the time, few women historians—could have anticipated, and which even fewer achieved. Her greatest, lasting scholarly contribution takes the form of two books, which in their mastery of official records laid the foundations of archival research upon which later generations of scholars have built. But her progress was never easy, nor were her successes complete. Ever entwined, her personal and her professional life were deeply touched by moments of acute stress, tinged with tragedy, that came to affect not only her academic performance but also the lives of family, friends, colleagues, and students.

The following memoir traces the outlines of her career and measures the significance of her work, against a background of personal and professional struggle. Inevitably, this says much about the writing of official history, the special circumstances of Britain's nuclear history, and Britain's role in the nuclear age. It also says something of the difficulties that have, over the years, attended the proper institutional recognition of her field, and its contribution to the discipline of modern history in Britain.

[1] A similar memoir appears in *Biographical Memoirs of Fellows of the Royal Society*, 58 (2012), 67–111.

Biographical Memoirs of Fellows of the British Academy, XI, 267–327.

Beginnings

Margaret Mary Elliott was born on 26 April 1921, the youngest of three children of a working class family. She was brought up in North Kensington, where her father suffered from poor health and (like many workers of his generation) long periods of unemployment; her mother, a primary school teacher by training, was forbidden to work by the marriage bar. Despite these difficult circumstances, all three children—Audrey, Donald and Margaret—were clever, and made their way in the world. Audrey and Margaret showed academic promise; and after finishing Portobello Elementary School, in 1932, at the age of eleven, Margaret (or 'Babs' as she was known in the family) won a scholarship to Christ's Hospital. She didn't enjoy the school, but thanks to the encouragement of her headmistress, as she later recalled, she enjoyed learning, otherwise she might have ended as a clerk with the London Council, which is what her parents had in mind.[2] Taking her School Leaving Certificate in 1936, she won a Leverhulme Entry Scholarship to the London School of Economics (LSE), where she made friends with many who shared her social background and who, like her, were ambitious for academic success. At the same time, she never forgot her family, or the fragilities of family life. In later interviews, she recalled sending half her scholarship money to help her parents.[3] Her father died of tuberculosis, after being out of work for months. She became and remained a staunch advocate of the welfare state, the National Health Service, the Labour Party, and state education.[4]

Entering LSE in 1938, Margaret won the Gladstone Memorial Prize and the Lillian Knowles Scholarship for economic history. With the coming of war, she was evacuated with LSE to Cambridge, where in 1941 she graduated with a B.Sc. (Econ.) degree with First Class Honours. Her courses focused on economics, banking, economic history, and international history. That she specialised in economic history she attributed to the stimulating lectures of Eileen Power, in many ways a powerful role model, who encouraged Margaret to continue in academic life. In 1941, however, academic prospects were few, so from September she found work as a temporary statistical assistant in the Prices and Statistics Section of the Iron and Steel Control directorate in the Ministry of Supply. The civil service suited her, and by 1945 she had moved to the Board of Trade, and

[2] Margaret Gowing, in an interview with Sarah White, 'Nuclear historian', *New Scientist*, 28 Nov. 1974, 656–9 at 656.
[3] Nik Gowing to author, 7 May 2004.
[4] Museum of the History of Science, Oxford (MHS), Gowing Papers, Perrier Box, Gowing to Neville Mott, 26 June 1986.

the Directorate of Housing Fitments, where she rose to the rank of Assistant Principal.[5]

In 1944 Margaret married Donald Gowing, an accomplished young singer, who had also been a scholarship student at Christ's Hospital. In 1939, Donald won a choral scholarship to King's College, Cambridge, and went up to read History. He is remembered by contemporaries at King's as having 'a happy disposition and an infectious enthusiasm', qualities that would have recommended him to Margaret.[6] In 1941, after Margaret and he graduated, Donald joined the RNVR. He was posted first to Combined Operations, then to naval intelligence. With the marriage bar suspended for the duration, he and Margaret were married in Wimbledon Registry Office just before he was posted overseas; he learned Japanese at a US military college in Colorado. Due to the imperatives of secrecy, for well over two years Margaret had no idea where her new husband was. Their only contact was through the occasional military 'bluey' letter, but with no originating location permitted. Unknown to her, Donald went on to serve as a translator for the US Naval Command in the Pacific; he was a member of General MacArthur's staff on board the *USS Missouri* when the Japanese surrender was accepted. After the war, he stayed on in Japan for a year as a political adviser at the British Embassy in Tokyo, and returned to England in 1946. Such a long period of separation from her new husband was a key factor in sharpening her personal determination to succeed in a male-dominated civil service and Whitehall environment: such single-mindedness—some described it as stubbornness—marked the whole of her career, largely in positive ways.

Whitehall after the war

In June 1945, with her husband overseas, and with Whitehall's war work winding down, Margaret looked to her future. Fate took a hand when she was spotted by Keith (later Sir Keith) Hancock, the brilliant, 'quizzical, kindly, energetic, pipe-smoking' Australian historian,[7] author of an

[5] CAB 160/5. Gowing Employment File. Her salary at the Board of Trade was £335 plus war bonus of £48 and special allowance of £50, or a total of £433.

[6] Donald Gowing (1921–69), later Director-General of the Musicians Benevolent Fund. See *King's College Magazine*, Nov. 1970, p. 37. For this information I am indebted to Ms Sue Turnbull of the Development Office, King's College, Cambridge.

[7] This description I owe to Ann Oakley, *Man and Wife: Richard and Kay Titmuss: My Parents' Early Years* (London, 1996), pp. 146–7.

acclaimed survey of the British Commonwealth,[8] who in 1941 had taken leave from the University of Birmingham to join the Historical Section of the Cabinet Office.[9] In June 1941 Sir Edward Bridges, Secretary to the War Cabinet, had suggested the idea of preparing a civil counterpart to the military history series that the Cabinet Office had produced since the end of the Great War.[10] 'Nowadays,' Bridges said, the 'armed forces … were no more than the cutting edge of the nation at war.'[11] To supervise this 'civil series', Bridges approached Hancock (who was, like him, a former Fellow of All Souls, Oxford).

Thanks not least to his reputation as an imperial historian, Hancock had Whitehall connections that opened doors. He took on the job at a lower salary than he might have had at Birmingham, by way, as he put it, of doing his 'national service', which, he took 'all the more seriously because it seemed so peculiar'.[12] In fact, he enjoyed remarkable freedom. To academic authors of his own choosing, he wrote his own instructions, subject only to the nominal approval of an advisory committee—under Dr E. A. Benians, Master of St John's College, Cambridge—that seldom met—and overseen by a Cabinet committee, chaired by R. A. Butler (newly appointed President of the Board of Education), that never interfered. For sceptics, it was legitimate to ask, Hancock said, whether there was any point in writing the history of the war before it was won. But few such doubts troubled him. For Hancock, the argument turned on the principle of 'funding experience for government use'.[13] With some reluctance,

[8] See W. K. Hancock, *Survey of British Commonwealth Affairs*: vol. 1: *Problems of Nationality, 1918–1936*; vol. 2: *Problems of Economic Policy, 1918–1939* (Oxford, 1937–42).

[9] See Jim Davidson, 'Sir William Hancock (1898–1988)', *Australian Dictionary of Biography*, vol. 17, 482–5; and his definitive *A Three-Cornered Life: the Historian W. K. Hancock* (Sydney, 2010). See also A. Low, 'William Keith Hancock, 1898–1988', *Proceedings of the British Academy*, 82 (1992), 399–414.

[10] The seed may have been sown earlier by Brigadier Sir James Edmonds, who since 1919 had led the Historical Section (established by the Committee for Imperial Defence (CID) in 1906), and who urged the need for a civil companion series. See Lorna Arnold, 'A letter from Oxford', *Minerva*, 38 (2) (2000), 201–19 at 203.

[11] Quoted in W. K. Hancock, *Country and Calling* (London, 1954), p. 196. Hancock credits Bridges with the idea for the series, whose activities are described in CAB 98, CAB 102 and CAB 103. For background, see Denys Hay, 'British historians and the beginnings of the Civil History of the Second World War', in M. R. D. Foot (ed.), *War and Society: Historical Essays in Honour and Memory of J. R. Western, 1927–1971* (London, 1973), pp. 39–55. See also Davidson, 'Sir William Hancock'.

[12] Oakley, *Man and* Wife, p. 300; Hancock, *Country and Calling*, p. 197.

[13] W. K. Hancock and M. M. Gowing, *British War Economy: History of the Second World War: United Kingdom Civil Series* (London, 1949*),* Preface, p. xi.

the Treasury approved payment for ten historians; eventually, the Series employed over twenty-five.[14]

As Hancock accepted, his authors faced the prospect of reading, digesting, and delivering summary conclusions based on some two million files. Bridges advised Hancock to begin at the top; and so he did, starting with the decisions of the War Cabinet, and working through their implications and consequences. With this 'top-down' protocol, an Olympian perspective inevitably pervaded the Series—whose individual volumes were to be written not in terms of 'one department, one history', but in reference to 'salient subjects', administrative functions of relevance to civil government.[15]

Hancock met Gowing for the first time in June 1945. He was in his forties, she was 24. She was impressed by his 'charm, his grin and kindliness', but 'scared stiff by his great erudition'.[16] Their relationship was, in a professional sense, love at first sight. In July, he requested her transfer, and Sir Edward Bridges persuaded the Treasury to agree. Reluctant to lose her, the Board of Trade delayed for months, until Hancock threatened to resign, on the grounds that without her, the central volume to 'which, for political reasons, great importance is attached', may have to be abandoned. The transfer was approved in September, and she was finally released in October. She moved from a salary of £433 to £548.[17]

Immediately, it seemed the pair were ideally matched. She was educated, attractive, agreeable, ambitious, amenable, and hard working. They shared interests in world travel and left-wing politics. They were both keen archive scholars. Hancock thought true talent was wasted in administration, and so (as she amply demonstrated in later years) did she. Both belonged to a meritocracy *avant la lettre*—'outsiders' by birth, keen to know how the Establishment worked, and to make it work for them. In this, they resembled Hancock's friend (and Gowing's idol) Richard Titmuss, whom Hancock pulled from an insurance office to produce the Series volume on *Problems of Social Policy*, and who pioneered social policy at the LSE. Like Titmuss, whose British Academy memoir she later

[14] These included W. H. B. Court, a friend and colleague from Birmingham, and Michael Postan, professor of economic history at Cambridge and a former official in the Ministry of Economic Warfare. Hancock, *Country and Calling*, p. 200.

[15] Hancock and Gowing, *British War Economy*, Preface, p. xi.

[16] M. Gowing on 'Hancock in Whitehall', in 'Hancock: some reminiscences', *Historical Studies*, 13 (1968), 302.

[17] CAB 160/5. Gowing's personal file relates Hancock's persistence in prising her away from the Board of Trade. Minute, 9 Aug. 1945.

wrote,[18] in joining Hancock Gowing left behind a life that was culturally thin and exchanged a job as a clerk for a career with a future.

On 17 September 1945 Gowing signed the Official Secrets Act and began work at the Cabinet Office. She was styled, in the Trollopian lexicon of the Civil Service, a 'Narrator'. Formally, she was Hancock's assistant, but she quickly became his apprentice, penetrating the mists of administrative history in the company of a magus of the art.[19] Hancock's Series had to embrace the war work of twenty agencies, including war production, food, agriculture, fuel and power, building, the social services, civil defence, land transport, shipping, manpower, and economic warfare. Predictably, authors (and departments) at first insisted that each was a special case, requiring special treatment. Diplomatically, Hancock found a way through the minefield by commissioning a few 'synoptic' volumes, which he intended to follow with specialised volumes dealing with departmental issues in greater detail. His authors had to exercise, as Hancock put it, 'a good deal of ingenuity', circumspection, and discrimination in working from documentary to oral evidence and back again.[20] Much time was spent in revision. Perhaps there were some, like Titmuss, who produced drafts that were 'too intimate, too revealing … for the ministry, full of gossip, rife with unflattering facts'.[21] In such cases, Hancock had to coerce and cajole, even to threaten.[22]

In 1947 Gowing was given the title of Historian, and the rank of Principal.[23] If, at first, Hancock treated her like a research assistant, she soon became his right hand, revealing what many later saw as 'a drive and ability for decisive action that other historians usually lacked'.[24] In dealing with difficult authors, diffuse sources, and dissonant departments 'she was my saviour', Hancock said.[25] During the next two years, she consolidated her reputation with the formidable *British War Economy* (1949), of which Gowing drafted a third, managing the statistics, so as to leave Hancock free to concentrate on broader themes of political economy, finance and

[18] Margaret Gowing, 'Richard Titmuss (1907–1973)', *Proceedings of the British Academy*, LXI (1975), 401–28. See also D. A. Riesman, *Richard Titmuss: Welfare and Society* (London, 1977), and J. Kincaid, 'Richard Titmuss', in P. Barker (ed.), *Founders of the Welfare State* (London, 1984).
[19] Margaret Gowing, 'Hancock: some reminiscences', *Historical Studies*, 13 (1968), 291–306.
[20] Hancock and Gowing, *British War Economy*, Preface.
[21] Oakley, *Man and Wife*, pp. 146–7.
[22] Ibid.
[23] CAB 160/5 Gowing File, Summary Sheet, 1959.
[24] Gowing Family Papers, Box 3, Webster to Nik Gowing, 23 Nov. 1998.
[25] Davidson, 'Sir William Hancock', p. 211.

manpower.[26] Later, according to Hancock, Gowing rescued the Series volumes on agriculture, land transport and the Board of Trade. No wonder he dubbed her his 'mobile reserve'. The next book in the Series she wrote with E. L. Hargreaves (Fellow of Oriel College, Oxford), *Civil Industry and Trade* (1952), which was followed by a chapter in *Studies in the Social Services*, edited by S. M. Ferguson and H. Fitzgerald.[27] By 1958, Hancock ranked Margaret as effectively co-editor of the entire Series, which eventually ran to twenty-eight volumes. Of the women who worked with Hancock at the Cabinet Office, two were especially dear to him—one, his secretary (Marjorie Eyre), whom he later married; the other, Margaret, who remained a friend for life.[28]

For Gowing (as she was now in print), the Hancock legacy was equally enduring. Being midwife to the series meant having to reconcile the wishes of historians and officials, without sacrificing the integrity of either. Thanks to Hancock 'the whole concept of official history ceased to represent the prostitution of the profession and became rather an important contribution to understanding in an age when Government policy bulks so large'.[29] From Hancock, Gowing took away lessons about how Britain managed economic mobilisation and planning, squaring civil liberty with efficiency, against an extemporised and flawed but remarkable history of interdepartmental and interservice cooperation. With Hancock, she shared a sense of outrage at America's early termination of Lend Lease, and the severe economic difficulties into which Britain had thus been put. Her reservations about the extent of American cooperation were to last the rest of her career, and to influence critical parts of her writing.

By the end of 1959, 32,000 copies of *British War Economy* had been sold, and a post-war generation of historians saw in it a narrative of victory through national unity and central management, heralding the advent of the 'social service state'. Thanks to Hancock and Gowing, the war for

[26] The book remains one of the best read and cited volumes in the series. See Jose Harris, 'Thucydides amongst the Mandarins: Hancock and the World War II Civil Histories', in D. A. Low (ed.), *Keith Hancock: the Legacies of an Historian* (Melbourne, 2001), pp. 122–48 at 133. See also Harris, 'If Britain had been defeated by the Nazis, how would history have been written?' in William Roger Louis (ed.), *Still More Adventures with Britannia: Personalities, Politics and Culture in Britain* (Austin, TX, 2001), pp. 211–28.

[27] Margaret Gowing, 'Introductory: the growth of government action and the ups and downs of the family', in Sheila Ferguson and Hilde Fitzgerald (eds.), *Studies in the Social Services* (London, 1954).

[28] Hancock, *Country and Calling*, p. 200. Gowing's account of 'The Civil Histories of the Second World War', delivered as a lecture in 1988, is preserved in her papers in Oxford. See also Fred Alexander, A. Boyce Gibson, Margaret Gowing and Robin Gollan, 'Hancock: some reminiscences', *Historical Studies*, 13 (1968), 291–306.

[29] Gowing on 'Hancock in Whitehall', p. 303.

the peace would be read as similarly requiring cooperation and planning.[30] In the words of Alan Bullock, the distinguished economic historian, the book was a 'perfect vehicle' for describing the career of Ernest Bevin.[31] Much later, British historians—winning for themselves belated access to the same official files—would beg to differ, and see in the Series' narratives more evidence of division and disunity, of conflict rather than consensus.[32] In their own time, some volumes met deep official opposition—Postan's history of British war production, for example, was blocked by the War Office and Supply and Service departments, on the grounds that it revealed too much. The Series volume on *Design and Development of Weapons*, almost shelved in 1955, appeared only in 1964. A later generation of historians saw them as narrative without dissent (or as Hancock himself liked to say of official histories generally, 'dead mutton'). This experience, too, Gowing took away with her—along with a cautious appreciation of the power of Whitehall to defend, deny, and delay.

Against this, Gowing enjoyed the prestige of working with the Cabinet Office. As such, she had entré to top secret papers, and everyday access to leading politicians and civil servants. Gowing remained in the Cabinet Office, working on the Civil Series until 1959. During the early 1950s, Margaret and Donald celebrated the birth of their two sons: Nicholas (Nik)—christened Nicholas Keith, after Hancock—in 1951, and James in 1954. In 1952, her experience of official archives was tapped by the Chancellor of the Exchequer, who appointed her—then aged only 30—to Sir James Grigg's Committee on government records. The Grigg Report in 1954 laid the foundations of the modern state records system in Britain, and was to have a dramatic effect on her own life.[33] Gowing later remembered a race between finishing her report and giving birth to James.[34] Fortunately, it proved to be a race, as in Alice, where all were winners.

[30] In Gowing's words, public enterprise, rationality and altruism had succeeded where markets and muddle had failed. See her 'The organisation of manpower in Britain during the Second World War', *Journal of Contemporary History*, 7 (1972), 147–67.

[31] Alan Bullock, *The Life and Times of Ernest Bevin*, vol. II (London, 1968), cited in Harris, 'Thucydides amongst the Mandarins', p. 141.

[32] See, e.g. Correlli Barnett, *The Audit of War* (London, 1986) and *The Lost Victory* (London, 1995).

[33] The Committee on Departmental Records (1954. Cmd 9163) was chaired by Sir James Grigg, Permanent Undersecretary at the War Office, 1939–42 and Secretary of State for War, 1942–5. The Grigg report recommended that the Lord Chancellor be responsible for the Public Record Office; that Records Officers should be appointed in each department; and that official papers should be reviewed after twenty-five years, and in principle transferred to the PRO after a fifty-year interval.

[34] [Lorna Arnold], 'Professor Margaret Gowing', *The Times*, 11 Nov. 1998, p. 23.

During the 1950s, Donald's singing ambitions met with mixed success. He hoped that being appointed as a member of the Royal Opera House, London, choir would launch a professional career but it did not, despite acclaim in many productions. The need for a reliable income to supplement Margaret's earnings led him to take an administrative post with the Musicians Benevolent Fund, and he rose to the position of Director-General during the 1960s. But the combined pressures of an unfulfilled musical career in parallel to Margaret's growing professional success and recognition led to alcoholism, which steadily darkened his and the family's lives. To look after the boys, the Gowings employed a college-trained nurse, Vera ('Va'), who stayed for seventeen years and became the family's best friend. But Margaret had to pay her, and to support her widowed mother as well. As it was, in the post-war years, a married woman with children, holding an *ex-tempore* post, could count on little sympathy (let alone superannuation) from the Civil Service Commission. Another future, preferably well paid, was needed.

As Hancock feared, the wartime History Office was never intended to be a permanent fixture. Hancock himself began to return to academic life as early as 1944, working on the Civil Histories only part time until 1957. As early as 1950, Sir Norman Brook (later Lord Normanbrook), then Head of the Civil Service, put the case for having a permanent Historian in the Cabinet Office, to which it was said he would have appointed Gowing; but the proposal met stiff formal opposition from the Treasury and the Civil Service Commission. In 1951, Gowing was told she had no prospect of being retained at the rank of Principal (with full pension benefits) without her post first being made subject to open competition. Apparently, she did not seek a permanent appointment in the Administrative Class, for which she was certainly eligible.[35]

In 1955, with the Civil Series coming to an end, with Hancock moving to the chair of economic history at Oxford, and with young children to support, Gowing faced a daunting choice—to continue on an unestablished basis in the Cabinet Office or, in her words, to 'move to different territory'.[36] With Hancock's encouragement, she applied in 1955 for the LSE's Readership in Social Administration—'work with a more human content', as she put it[37]—and in the following year she applied for the

[35] CAB 160/5 Gowing Employment File, RMJ Harris, Treasury to A. B. Acheson, Cabinet Office, 17 July 1951.
[36] MHS, Gowing Papers, Gowing to Appointments Board, NIESR, 21 Sept. 1956.
[37] MHS, Gowing Papers, Gowing to Secretary, LSE, 13 Sept. 1955.

Secretaryship of the National Institute of Economic and Social Research (NIESR). Her referees for the first were Hancock, Sir Keith Murray (chairman of the University Grants Committee), and Professor G. C. Allen (of University College London). Her applications reflect her well-tested confidence in speaking knowledgeably about public policy. But neither application was successful. She remained in the Cabinet Office until 1959, during which time she worked for the Radcliffe Committee on the monetary system, and for Sir Norman Brook himself, on what she called 'experimental work on historical work for administrative use'[38]—the results of which were never published.

In 1958, following the successful reception of the Grigg Report, the Macmillan government passed the first Public Record Act, which required all executive departments to set up archives and records management systems, and to appoint Departmental Records Officers (DROs) to oversee the review, collection, listing, and conveyance of papers to the Public Record Office (PRO). This was the origin of the 'Fifty-Year Rule'.[39] Not all agencies, however, were included in the Act's catchment. This omission notably included the United Kingdom Atomic Energy Authority (UKAEA),[40] which had been set up in 1954, following the first British bomb tests in 1952, to manage Britain's civil nuclear policy and power production. The Authority had inherited the functions and assets of the 'Tube Alloys' department of the Ministry of Supply (1940–54), along with the records of several defunct wartime agencies. But to the surprise of Whitehall, the Authority—a government corporation, rather than a department—asked to be voluntarily included under the Act. This created an unprecedented opening for an 'Historian and Archivist'.

The UKAEA's decision had important consequences. Without it, the flow of nuclear history materials to the PRO would have been slowed to a trickle, and the earliest would not have reached the public until the 1990s. The decision also made Britain's early nuclear history better known to a general public whose understanding of wartime developments had been dominated by American narratives since 1945, and which had only recently been given much information about Britain's wartime achievements, following Macmillan's Bermuda accord with Eisenhower in 1957.[41]

[38] MHS, Gowing Papers, Curriculum Vitae for the University of Kent, 1967.

[39] By the Public Records Act of 1967, the 'Fifty Year Rule' was replaced by a 'Thirty Year Rule'.

[40] The constitutional concept of such an Authority was new to the civil service. For its history, see AB 48/252 and AB 16/3851, 3852; 4185, 4286, and 4589.

[41] The American nuclear story was highly influenced by the Smyth Report in 1945. Later, more detailed accounts, but which also paid relatively little attention to Britain's contribution,

For Gowing, the Authority's decision created a golden opportunity—at a single stroke—to continue as an historian, to become 'established' as a permanent civil servant, and to retain her rank as Principal (later rising to Assistant Secretary).[42] In the summer of 1959, backed by Hancock, she applied for and was offered the job. Having failed to find an administrative loophole by which he might have kept her as an historian in the Cabinet Office, Sir Norman Brook reluctantly let her go.

The atomic age, 1959–1966

Gowing departed from the Cabinet Office on 14 June 1959.[43] Looking back, she later recalled her fourteen years there as among 'the happiest in my life'.[44] Her new job was not easy. Just one person was meant to organise, from scratch, and bring under a unified system of reference, a vast quantity of relevant archives, originating in the Cabinet Office, the War Office, the Supply Departments, and the Services, from at least 1939 to 1959; and to devise a records system appropriate to a rapidly growing organisation that was already employing over 40,000 people, working in more than ten offices, laboratories and factories across Britain. It also meant reading up a subject about which she knew nothing. Her archival *nous*, polished by long practice in the Cabinet Office, was certainly relevant. But her role, as she saw it, was not merely custodial nor, for that matter, managerial. To an historian, archives are a means to an end, not an end in itself. As to this part of her work, she later recalled, 'very little thought at all had been given to the historical side of the task or its implications'.[45] It was a testament to her own vision and energy that, within

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appeared in three volumes: R. G. Hewlett and O. E. Anderson, *The New World, 1939–1946, Volume I: a History of the United States Atomic Energy Commission* (University Park, PA, 1962); R. G. Hewlett and F. Duncan, *Atomic Shield: a History of the United States Atomic Energy Commission, 1947–52* (Washington, DC, 1972); and R. G. Hewlett and J. M. Holt, *Atoms for Peace and War, 1953–1961* (Berkeley, CA, 1989).

[42] MHS, Gowing Papers, Brown Archive Box, Jobs and Applications, MG to C. P. Myers, 21 July 1964.

[43] Gowing later remarked that she had declined the offer of an Assistant Secretaryship in the Cabinet Office because she 'looked forward to writing another book for publication'. MHS, Gowing Papers, Brown Archive Box, Jobs and Applications, MG to Peirson, 2 May 1962. Norman Brook was prepared to make her Cabinet Office Archivist, but could not offer her a pension. See CAB 160/5 MG to S. Anderson, Establishment Officer, Cabinet Office, 4 May 1959.

[44] CAB 160/5, MG to Theobald, 26 Dec. 1969.

[45] MHS, Gowing Papers, Brown Archive Box, Jobs and Applications, MG to C. P. Myers, 21 July 1964.

two years, she had immersed herself sufficiently in the subject to embark upon what would become her life's work—the history of Britain's atomic energy programme.

In Gowing's day, writing nuclear history meant navigating uncharted seas. As her colleague Lorna Arnold recalled, 'there was no secondary material, and the subject, which had been wrapped in wartime secrecy, was still largely secret'.[46] Gowing also had no scientific training ('I didn't know an atom from a molecule', she liked to say).[47] And she knew nothing of the history of science. But she did have several advantages, whose value she understood from her years at the Cabinet Office. The UKAEA would let her work with the minimum of interference. There were few strings attached—no deadlines, no designated methods of work, or periods or themes to be covered. She was given secretarial support, a salary, and she reported directly to the Chairman of the Authority. She was free to get on in her own way, at her own speed. Thanks to an early Authority agreement with the Cabinet Office, she had access to all departmental, Cabinet Office, Downing Street, and Foreign Office records, however secret, except for an undisclosed quantity of intelligence material.[48] An advisory committee was mooted, but apparently not appointed.[49]

All Gowing wrote, of course, would be subject to vetting, but within the Authority there was the presumption that some form of publication would ensue. Above all, she had the inestimable advantage of writing on a subject of intense national and contemporary interest, about which little was publicly known, but for which there was a growing audience, eager to learn, and likely to respond well to a lively narrative. Her only competition came from American historians, and their account of the nuclear story, in her eyes, needed a British companion.[50]

From the early 1960s, Gowing set out to apply to Britain's nuclear history the methods she had learned from Hancock and the Cabinet Office—that is, begin at the top, and work your way through the people who

[46] MS Memo, Lorna Arnold to author, Nov. 2004, section 5, p. 3. Lorna Arnold joined the UKAEA's Health and Safety Branch around the time that Gowing was appointed; their offices were nearby, and they often lunched together. Ead., section 4, p. 1, 6.

[47] MS Memo, Arnold to author, Nov. 2004, section 5, p. 3. This mantra appears repeatedly. See Sarah White, 'Nuclear Historian', p. 656; [Lorna Arnold], 'Professor Margaret Gowing', p. 23.

[48] Official Historians were appointed by the Cabinet Office, but Gowing was appointed and employed by the UKAEA.

[49] See PRO AB 16/3851, Sir Roger Makins to Hitchman, 7 Nov. 1960.

[50] The first American official nuclear history was published in 1962, two years before Gowing's *Britain and Atomic Energy* appeared in 1964. See Hewlett and Anderson, *The New World, 1939–1946, vol. I.*

actually made the history. In this, she was fortunate in writing at a time not long after the events she was describing, and could command the help of many who knew these events at first hand. She played by the rules—she produced drafts, and sent them for comment to senior officials. As during the war, she excelled at asking awkward questions of senior scientists and officials. The first time they met, Sir Christopher Hinton gave her two hours, and 'bared his soul'. Sir James Chadwick, the Nobel-Prize-winning physicist who had refused to cooperate with a Cambridge historian sent earlier by the Cabinet Office, pursued their conversation with 'a glow of warm letters'. She became good friends with the physicists Nicholas Kurti and Sir Rudolf Peierls, both now at Oxford. In France, she met Bertrand Goldschmidt, and in the United States, J. Robert Oppenheimer and General Leslie Groves. She got on so well with Nils Bohr, the distinguished Danish physicist, that he invited her to Copenhagen.[51]

Within the Authority, the competing roles of archivist and historian were not always well understood, and for the latter Gowing had to fight for support. Among her closest allies was Sir Roger Makins (later Lord Sherfield),[52] chairman of the UKAEA, and an historian by education. Makins had served in Washington, DC, during the passage of the McMahon Act, 1946, the implementation of which denied Britain access to American nuclear know-how—especially the production of nuclear materials—and he knew first-hand the limitations of the 'Special Relationship'. In 1964, the news of his forthcoming retirement brought Gowing a moment of despair: 'the future of myself and my history seem very gloomy and I wonder if I can face it', she wrote.[53] Revealing sentiments that she made more vocal over time, Gowing reflected:

> I suspect that people think I collect files together and then sit down in an academic calm so enviable compared with the administrative hurly burly and, with a bit of [luck] and inspiration, write a chapter. In fact it is a gruelling intellectual job which requires intense concentration and involves very difficult problems of analysis, judgement and selection, as well as literary skill. Quite apart from this, I have had to cope with very eminent, sometimes very difficult people.

[51] MG to C. P. Myers, 4 March 1964. Their friendship contributed to Margaret Gowing, 'Niels Bohr and nuclear weapons', in A. P. French and P. J. Kennedy (eds.), *Niels Bohr: a Centenary Volume* (Cambridge, MA, 1985), pp. 266–77.

[52] Roger Makins, Baron Sherfield (1904–96), Fellow of All Souls, diplomat and civil servant at the British Embassy in Washington, DC (1945–7) and British Ambassador to the US (1953–6), served as chairman of the UKAEA between 1960 and 1964. He was elected a Fellow of the Royal Society in 1986, under Statute 12.

[53] MHS, Gowing Papers, MG to J. Charles, 21 July 1964.

> If I had put a foot wrong the opprobrium on the Authority might well have been considerable.[54]

Fortunately, Gowing's relations with the Authority improved when—after just two years and two months, without research assistance, and amidst difficulties at home—she researched, wrote and published her first work in nuclear history, *Britain and Atomic Energy, 1939–1945*.[55] This was the first civil official history to appear outside the Cabinet Office series. As such, publication could not be guaranteed—certainly not if it contained footnotes, even if they were to documents that other historians could not see for the next thirty years. However, once Gowing had submitted her manuscript for vetting, few changes were suggested, and opposition melted away. The UKAEA retained copyright and, with a nod to security, removed her footnotes.[56] But they let the book be published by Macmillan, with an eye to a wide potential readership. It was a canny decision, profitable to publisher, agency, and author.

Conceived by Gowing as the first of three chronological volumes, '*BAE*' was a triumph. Hancock, who had read the text in draft, pronounced it 'first rate'. Its success inspired Mark Oliphant, FRS—the distinguished Australian veteran of the Manhattan Project, and Hancock's former colleague at Birmingham, now returned to Australia—to seek the appointment of an historian to work with the new Australian Academy of Science in Canberra.[57] Stephen Toulmin, the philosopher of science, then exploring new frontiers at the Nuffield Foundation and Sussex University, thought that 'No better example of contemporary narrative history of science has yet appeared …'. The media played a similar tune. Even the Cabinet Office was impressed, and in 1966 decided to sponsor a new series of peacetime official histories, which took Gowing's readable book as a model.[58] To a degree unusual among academics, and remotely rare among civil servants, Gowing was suddenly launched into the limelight, and proclaimed a national treasure.

[54] MHS, Gowing Papers, MG to J. Charles, 21 July 1964.
[55] Margaret Gowing, *Britain and Atomic Energy, 1939–1945* (London, 1964).
[56] Not until 1980 were Gowing's footnote references made available to readers at the Public Record Office, where they are available today in the form of typescript booklets.
[57] MHS, Gowing Papers, Correspondence Files, Hancock to Gowing, 12 Nov. 1961.
[58] MHS, Gowing Papers, Official Histories, Cabinet Office, C. J. Child to David Allen, 24 Aug. 1972. At the end of 1960, the Prime Minister announced three new volumes—on colonial development, by D. J. Morgan; environmental planning, by J. B. Cullingworth; nationalisation, 1945–60, by D. N. Chester; followed possibly by a fourth on external economic policy by L. S. Pressnell (Memo by Gowing, 4/1972). Subsequently, the series has included three volumes on the National Health Service by Charles Webster.

The reason was simple. *Britain and Atomic Energy* told a story that was unfamiliar to the British public, and little known even to many in senior government circles. Working from documents and interviews, Gowing charted Britain's heroic contributions in Cambridge, Manchester and Birmingham, through the Military Application of Uranium Detonation (MAUD) Committee of 1941, preparing the way for the Manhattan Project. At a time when the United States was keen to monopolise the story, Gowing reminded the world what Britain had contributed to its success. Her point was clinched by an appendix that, for the first time, reprinted the original February 1940 memo sent by Otto Frisch and Rudolf (later Sir Rudolf) Peierls to Mark Oliphant, showing that, contrary to Heisenberg's calculations, a uranium bomb was technically feasible. The story that Gowing came across this priceless paper in an old cornflakes packet may be apocryphal, but its retelling had an instant appeal that heavyweight official history could not match. Suddenly, there was an interest in the contemporary history of science, and in preserving archives on both sides of the Atlantic. In Gowing's phrase, the bomb had 'drawn a line across history'.[59] A new age of science had begun. If scientists had 'the future in their bones', as C. P. Snow put it, the nuclear scientists were in charge of reading the auguries.

In retrospect, Gowing was both lucky and inspired in her timing. '*BAE*' appeared just as Harold Wilson's newly elected Labour Government pronounced its determination to lead a 'white hot technological revolution'. Here was a textbook showing what Britain could do. But this was not the only attraction. Amidst the gray precincts of official history, traditionally dominated by worthy accounts of transport policy and export controls, hers was possibly the most *interesting* book to trace its origins to Hancock's benevolent influence. Although she escaped becoming a 'teledon', in an age that coined the art form, her mail now included invitations to join government committees,[60] and to write for the literary press. That her contributions relied upon a thin background in science did not diminish her influence, or her reputation, which in any case was augmented by displays of secret documentary knowledge that few, if any, could match. Overall, the response of the UKAEA was gratifyingly positive. Public

[59] Gowing, *Britain and Atomic Energy, 1939–1945*, p. 386.

[60] Including the SSRC's Committee on Social Science and Government, the Publications Advisory Committee of the Public Record Office, the Executive Committee of the Association of Contemporary Historians, and the International Committee on the History of the Second World War.

acclaim had won the Authority a rare form of *kudos* that politicians admired and administrators understood.

This Niagara of near-universal praise had a tremendous effect on Gowing's self-esteem, at a time when professional encouragement and support was dearly needed. Her husband, Donald, had by now long suffered from depression and alcoholism, and his continuing tragedy weighed upon her to such a degree that she sought a separation.[61] She thought time spent apart from Donald would benefit the boys.[62] Of course, she had also to earn a living. She had produced her first volume in less than five years, but the next—covering at least the next decade of Britain's nuclear story—would take longer, and involve the mastery of more complex organisations, structures, and technical issues, not to mention the contributions of many more scientists and engineers. She began to look for a university post where she could take the boys, one that would let her relinquish her role of Authority archivist, while keeping a hand in writing its history.

When, in 1966, such an opportunity arose to take on 'work with a more human content', as she put it, she seized it with enthusiasm. In September 1966, backed by her usual sponsors, and basking in the success of her book, she was appointed to a newly created Readership in Contemporary History at the University of Kent. This post she hoped would help her promote the study of science and society—perhaps along the lines of the University of Sussex, which had begun similar activities in January the same year.[63] A senior academic appointment was surely her due—and Kent could have been her solution. But, as time revealed, it was not to be her destiny.

Canterbury tales

The University of Kent was founded in 1964 and, like other post-Robbins 'new universities', was determined to play its part in 'redrawing the map of knowledge'. Gowing was actively encouraged to come, in the hope that she would help 'close the gap' between Snow's 'Two Cultures' and develop

[61] Nik Gowing to author, 7 May 2004.
[62] MHS, Metal Bookcase, Bullock file, Gowing to Bullock, n.d. but *c*. Dec. 1971.
[63] See Roy MacLeod (ed.), *Technology and the Human Prospect: Essays in Honour of Christopher Freeman* (London, 1986), Introduction. Later correspondence suggests that Gowing may have been offered a position at Sussex, before she accepted Kent, but this has not been confirmed. See MHS, Gowing Papers, I&D File, Gowing to Asa Briggs, 3 Oct. 1974.

the academic study of science and society. Leaving Donald in London, she moved to Canterbury in October, 1966, with high hopes all round.

When she took up the Readership, the UKAEA made her a consultant, with an annual retainer of £1,000, a three-year contract (to September 1969), and a deadline of 1970.[64] 'It is a condition of the present agreement', the Authority said, 'that you will, subject to the normal exigencies of life, continue the project with undiminished vigour; and in particular use your best endeavours to achieve or improve upon our estimate of the time required for [its] preparation.'[65]

It was soon clear that Gowing's late entry as a 'mature academic' was to be a challenge for all concerned. As she discovered, taking time to research and write a major book, based on close contact with primary sources in distant archives, was bound to sit uncomfortably with the timetables of routine university business. Nonetheless, she began well, and contributed to lectures, tutoring, committees, and sixth form conferences. As a single parent, home life with the boys proved difficult, but manageable. She christened their new home in Nackington Road, 'Elliotts', after her own family name. In the coming months, preoccupied with university work, and with snatches of research, she published nothing new on atomic energy. However, she also took important steps in a wider direction. Reflecting on her own experience, she began to talk about the main problems besetting the writing of contemporary history—the disappearance of leading personalities, and the loss or destruction of their records.[66] While many in Britain were interested in conserving political, military and literary records, there was no national effort to preserve the papers of Britain's leading scientists and engineers. Gowing recalled how, in the course of interviewing James Chadwick at his retirement home in North Wales, the two sat in his attic, surrounded by wooden filing cabinets full of priceless documents. She was greatly worried when, asking what Chadwick was going to do with them, he 'shut his eyes, groaned, and said, "burn them"'.[67] Such episodes helped set in motion what was to become perhaps one of her most significant contributions to British scholarship, the Centre for the Archives of Contemporary Science (CACS).[68]

[64] Institution of Mechanical Engineers, Hinton Papers, MG to Hinton, 27 Jan. 1978.
[65] MHS, Gowing Papers, Jobs and Applications, Contract with UKAEA, Oct. 1966.
[66] M. Gowing, 'The Records of Science and Technology—with Thoughts about their Disposal', British Records Association, Annual Meeting, 5 Dec. 1966.
[67] Bodleian Library, Special Collections, Gowing Papers, Retirement speech at the Royal Society, 1 Sept. 1986.
[68] This episode is recounted in Gowing, 'The Contemporary Scientific Archives Centre', *Notes and Records of the Royal Society*, 34 (1979), 123–31.

In 1961, in the course of interviewing her nuclear physicists, Gowing had the good fortune to meet Nicholas Kurti, FRS, the distinguished Hungarian émigré physicist, who was deeply interested in the history of Britain's wartime Tube Alloys project.[69] Kurti read and commented on *BAE* in draft, correcting several factual errors but broadly welcoming her work, and giving it a fine review.[70] During the mid-1960s, interviewee and interviewer became steadfast allies, and bonded to mobilise support for something like a national archive for contemporary science. By 1966 their 'open conspiracy' included Alan (later Sir Alan, later Lord) Bullock, the acclaimed contemporary historian and founding Master of St Catherine's College, Oxford; Roger Ellis, of the Historical Manuscripts Commission; and William (later Sir William) Paton, FRS, the noted Oxford medical scientist, who represented the Royal Society's interest in the papers of its Fellows. A meeting in July 1966 led to the establishment in 1967 of a Joint Standing Committee of the Royal Society and the Historical Manuscripts Commission which, after many meetings, commissioned in 1969 a pilot survey of the surviving papers of three British scientists to demonstrate whether Gowing's ideas were feasible.[71]

Under Gowing's supervision, this survey was conducted by Miss Joan Pye, formerly Sir John Cockroft's secretary, and currently the UKAEA archivist at Harwell.[72] Miss Pye processed the three collections in only three months. In 1969, acting on the advice of Dr Michael Hoskin, the principal historian of science at Cambridge (and founder of the Churchill College Archives Centre), Gowing proposed the establishment of a processing centre, rather than a national archive, in the interests of economy and cooperation with existing institutions. A meeting at the Royal Society confirmed the idea of a Centre for Contemporary Scientific Archives—not a single site, but an active service, set up with private funding to catalogue papers and find permanent homes for them.[73] Money was obtained

[69] John Sanders, 'Nicholas Kurti', *Memoirs of Fellows of the Royal Society*, 46 (2000), 299–315.
[70] Bodleian Library, Special Collections, Kurti Papers, J. 807A, Kurti review, *c*.16 Nov. 1965.
[71] The three were Sir Francis Simon, Sir John Gaddum and Professor L. R. Wager.
[72] Gowing, 'The Records of Science and Technology …'; M. Gowing, N. Kurti, J. M. Pye, and R. H. Ellis, 'The archives of twentieth century scientists and technologists', *ASLIB Proceedings* (March 1971), 118–32.
[73] During the next decade, disagreements would emerge as to the degree of detail into which catalogues would enter, thus how long they would take, and how much they would cost. Gowing preferred a rudimentary system, such as she had known in Whitehall. Professional archivists preferred more detailed catalogues. Eventually, Gowing lost the point of principle, although in practice the degree of cataloguing detail would vary. See Bodleian Library, Special Collections, Gowing Papers, Retirement Speech, Royal Society, 1 Sept. 1986.

in 1972 from the Wolfson and other foundations for a three-year project, to begin in 1973. In 1972, Gowing also launched an SSRC-sponsored project to prepare guides to newly opened papers at the Public Records Office; and organised a conference with the SSRC on the use of historical data in the social sciences.[74]

Inevitably, all this missionary activity competed for attention with Gowing's central task—for which, in fact, she was being paid—viz., preparing the second volume of her nuclear history. In 1967, to keep the history on the rails, the UKAEA persuaded Mrs Lorna Arnold, an experienced civil servant, to transfer from the Authority's Health and Safety Division to become the Departmental Records Officer (DRO) and Gowing's Assistant Historian. Arnold had taken an honours degree in English and Latin from the University of London (1937), and then taught secondary school for two years before entering the civil service at the outbreak of the war.[75] Like Gowing, she had two sons. She had not studied history. On paper, she was a talented generalist. But she was adaptable, resourceful, and eventually became something of a 'boffin'—a description she would, with characteristic modesty, deny. By the beginning of 1968, she and Gowing had researched and begun to draft parts of the second volume of the nuclear history, which took the story from 1945 to 1952. Much remained to be done, and both were hard pressed. When the Public Records Act of 1967 reduced the mandatory 'closed period' from fifty to thirty years, the Authority's deadlines for reviewing and transferring records to the PRO quickly drew closer. As Gowing had little time to visit the several sites at which nuclear archives were kept, Arnold took on more and more of the work. Showing great ingenuity and initiative, she became to Gowing what Gowing had been to Hancock—and, in certain respects, overtook her senior.

[74] MHS, Gowing Papers, Jobs and Applications, CV (1972). The Guide was compiled by Dr Brenda Swann and Miss Turnbull, and published in Oct. 1971.

[75] Lorna Arnold (1915–), born in Surrey, studied at Bedford College, 1937–9 (BA Hons. in English and Latin) and Cambridge (Diploma in Education, 1938). During the war, she served in the Army Council Secretariat. Between 1945 and 1947 she was on the staff of the Allied Control Commission in Germany and in its Washington, DC, office. For a time, she was the only woman in the British diplomatic service. In May 1949, she left the service to be married, and had two children. In 1955 she returned to official work, and in 1959 was recruited by the newly formed UKAEA to work on a report following the Windscale accident of 1957. In 1967, she joined Gowing, and became the UKAEA's Departmental Records Officer (DRO). Later, she was made UKAEA historian. In 1976 she moved to Harwell to be closer to her work. The same year, she was appointed OBE. Today, she lives in retirement in Oxford. I am grateful to Mrs Arnold for this information.

Given the circumstances, the completion of volume two—*Independence and Deterrence, 1945–1952* (or *'I&D'*, or *Indy*, as it was familiarly known to Gowing and Arnold)—was considerably delayed. The amount of material was huge, and as new sources were discovered a projected one-volume product became, on paper, two. More than *BAE*, these second volume(s) involved close vetting by the UKAEA, the Foreign Office, and the Ministry of Defence. In a reflective moment, Arnold describes how the two women researched the chapters on the 'Hurricane' tests, which involved trekking to the Atomic Weapons Establishment at Aldermaston. There it was ruled that, despite their being official historians, and so under the rule of the Official Secrets Act, they could not take their notes out of the office, and so must do all their writing *in situ*, under the watchful eye of the Departmental Records Officer. The ordeal was complicated by the tyrannies of transport. To get to Aldermaston, Gowing had to leave her boys, catch a very early train from Canterbury to Waterloo, thence by Underground to Paddington for a train to Reading. Meanwhile, Arnold drove from Amersham to collect Gowing at Reading, for the drive to Aldermaston. They finally arrived at 10.00. 'We worked like mad in the archives,' Arnold recalls, 'with a sandwich and a cup of tea at our desks … until the office closed at 5 pm and we started the journey home.' 'Once', she adds, 'we stayed two nights at a nearby riverside hotel,'[76] but their domestic duties could seldom permit such indulgences.

Practical difficulties were compounded by changes in the directorate of the UKAEA. By the early 1960s, many of Gowing's wartime contacts had died or retired. In their absence, she began to rely on a few advisors, notably including Alan Bullock as well as her 'nuclear friends' Nicholas Kurti and Rudolf Peierls. Her mentors at the UKAEA included Robert Spence, the chief chemist and later director of Harwell, and Sir Christopher (later Lord) Hinton, the towering and formidable director of the Industrial Group of the British nuclear power project based at Risley, which formed a triad with Harwell and the Atomic Weapons Research Establishment at Aldermaston. Hinton was active in the House of Lords, and later became chairman of the Central Electricity Generating Board (CEGB) and the first Chancellor of the University of Bath. Gowing found in him a loyal ally.[77]

[76] Memorandum, Arnold to author, Nov. 2004, section 7, p. 11.

[77] Christopher Hinton, Baron Hinton of Bankside (1901–83). Gowing wrote Hinton's entry in the *Dictionary of Business History*, vol. III, 1985, followed by his entry in the *Dictionary of National Biography* (1981–5), 1990, pp. 195–6. At his request, Gowing delivered the eulogy at Hinton's memorial service in Westminster Abbey. According to Lorna Arnold, Hinton was 'a

Miraculously, the end of 1968 saw the authors of '*I&D*' nearing a first draft. Gowing focused on Volume 1, and Arnold on Volume 2. They had no clerical help beyond the secretarial pool at Harwell. Margaret worked against the odds—in her words, writing until 3 a.m. every night after getting the boys to bed, and every weekend, while looking after an ill housekeeper (whose salary she had to pay).[78] Sending greetings to Gowing from Canberra on Christmas Day, 1968, Hancock guessed that she 'must have been working like a b[. . .] at Atomic Energy II'.

> In times of great distress, as I well know, work is medicine, but try not to give yourself an overdose of it. I have no apprehension at all of your second volume not equaling, or even surpassing, the first one; but I suspect that it is at present in what I call the 'slinging together stage'? Whatever happens, you must give yourself time to fuse every sentence and paragraph and chapter in the crucible of your final drafting, an agonising, exhausting, exhilarating task. My prayers will be with you when the time comes for you to face it.[79]

However, a completed final draft was still far distant. If commuting to London and Harwell two days a week was stressful, so were the pressures to conform to her department's expectations of undergraduate teaching, an occupation for which she was neither trained nor especially gifted. She made herself unpopular by writing an article comparing grants to Kent's student union with the funding available to patients at the local mental hospital. She recounted how, as a member of her local education committee in London, 'she had to struggle to get £2000 to replace the lavatories in a slum school'.[80] Like the other 'new universities', Kent required staff to socialise to a degree that she found difficult to match with family commitments. Amongst the staff, she made few friends. These included Robert Spence, FRS, who was Master of Keynes College. But her head of department in Canterbury, Professor Theo Barker, became an implacable enemy. To Barker, she was a troublesome priest. She was not martyred but, according to a colleague, was instead hived off into a 'department' by herself.[81]

With Donald in London, her sons at school, and few friends at work, sadness and loneliness soured her correspondence. The ever-supportive Hancock counselled patience:

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brilliant man, a kind and delightful man, who could be very difficult at times. He and MMG had a love-hate relationship for many years'. Memorandum, Lorna Arnold, section 7, p. 20.

[78] Institution of Mechanical Engineers, Hinton Papers, Gowing to Hinton, 27 Jan. 1978.

[79] MHS, Gowing Papers, Hancock Files, Hancock to MG, 25 Dec. 1968.

[80] White, 'Nuclear historian', p. 657.

[81] Pers. comm., Maurice Crosland, University of Kent, to author, 29 April 2004.

> For James' sake, you have to stay a few more years in Canterbury, which you have no cause to love. But since you have to live in it a while, you may as well look for a *modus vivendi*. Take Barker … if you can find a *modus viviendi* with him, life will be more tolerable for you both …[82]

This proved impossible. Worse news befell her on 16 December 1969, a day she was away doing research, when Donald suffered a massive stroke and died in hospital in London. Nik was in the midst of his 'A' levels, and James was still in school. Remarkably, the family survived its heavy loss. Nik won a place at Bristol, where he read geography. James took up a place at Wye College, and later began to farm in the Orkneys. The boys made their own way. But Donald's death left Gowing coping with a great sadness that grew ever more intense with time.

From mid-Summer 1969, Gowing had begun looking for another job. Her morale was boosted by the warm reception given her paper to the Anglo-American Historical Conference, meeting in London, on the contemporary history of British science. Kurti recommended she send it to Hugh Trevor-Roper, Regius Professor of Modern History at Oxford, adding that the recent TV series by Kenneth (later Lord) Clark on 'Civilisation' had failed to mention Galileo, Newton, or Einstein.[83] In July, 1969, Gowing answered an advertisement for the Keepership of the Public Records, effectively the head of the Public Records Office, a position for which her expertise and experience amply qualified her. To her grief, but perhaps not to her surprise, she was the 'only outsider' amongst the three interviewed, and was passed over in favour of the Deputy Keeper, whom she dismissed as a 'medievalist', 'competent but very pedestrian', and suggested the office was 'anti-feminine'. 'I desperately wanted it and was very disappointed', she confided to Kurti, and excused herself from meetings with him, pleading domestic duties: 'I long to finish vol. II', she said: 'the thought I might is all that keeps me going sometimes. Then perhaps I'll escape Canterbury, which is *not* my spiritual home.'[84] In 1970, she tried another tack, and

[82] MHS, Gowing Papers, Hancock to MG, 9 July 1969.

[83] Bodleian Library, Special Collections, Kurti Papers, Gowing to Kurti, 25 July 1969, Kurti to Gowing, 25 Aug. 1969.

[84] Bodleian Library, Special Collections, Kurti Papers, H 127, Gowing to Kurti, 9 Nov. 1969. The successful candidate at the PRO was Jeffery Raymond Ede (1918–2006), CB, 1978, Assistant Keeper, 1947–59, Principal Assistant Keeper 1959–66, Deputy Keeper 1966–9, who served as Keeper of Public Records 1970–8. He was also a Lecturer in Archive Administration, School of Librarianship and Archives, University College London, 1956–61, and President, Society of Archivists, 1974–7. *The Independent*, 23 Dec. 2006. For histories of the PRO, see Philippa Levine, 'History in the archives: the Public Record Office, 1838–1886', *English Historical Review*, 101 (1986), 20–41; Philippa Levine, *The Amateur and the Professional: Antiquarians, Historians and Archaeologists in Victorian England, 1838–1886* (Cambridge, 1986); and John D. Cantwell, *The Public Record Office, 1838–1958* (London, 1991).

applied for the newly vacated chair in the History and Philosophy of Science at University College London, the oldest chair in the subject in England.[85] This was perhaps the first indication that Gowing saw herself as contributing to the history of science as a discipline, rather than to the contemporary history of science and politics. However, the UCL Department had no discernible interest in the history of contemporary science, and few were surprised when a scholar of early modern science was appointed.[86] Nonetheless, for Gowing these applications were useful trial runs. Her referees inevitably included Hancock, as well as Alan Bullock, Nicholas Kurti, and Sir Rudolf Peierls, all in Oxford. Peierls respected her work, and probably sent her the UCL advertisement. All three knew she was unhappy at Kent.

A break point came in January 1972, when Gowing applied for a personal chair at Kent in order, as she put it, to finish her book. To her surprise, her application was declined, and appeals to the Vice-Chancellor, Geoffrey Templeman, proved unavailing.[87] The conversation ended badly. Accusing Templeman of putting administration above scholarship, Gowing told him that Kent was 'no place for my type of activity'.[88] She was probably right.

Given all the difficulties Gowing either made or met, it was largely thanks to Lorna Arnold that the UKAEA history made any serious progress at all over the next two years. A year earlier, in the spring of 1971, Gowing promised Christopher Hinton that final drafts would be circulated in the autumn that year.[89] But it was not until early 1972 that draft chapters finally went to departments for comment—almost three years late. In the meantime, the entire first draft was read by Alan Bullock—perhaps the first person outside government to have done so—who

[85] See William A. Smeaton, 'History of Science at University College London, 1919–47', *British Journal for the History of Science*, 30 (1997), 25–8.

[86] Dr P. M. Rattansi, a student of Walter Pagel, was appointed to the chair.

[87] Geoffrey Templeman, first Vice-Chancellor of the University of Kent, was an historian, well known for his history of Warwickshire. He retired in 1980 and died on 22 Feb. 1988. For context, see Graham Martin, *From Vision to Reality*: *the Making of the University of Kent at Canterbury* (Canterbury, 1990). Regrettably, this account says nothing about Gowing's presence at the university. I am grateful to Ms Anna Miller of the Templeman Library, University of Kent, for this information.

[88] 'In the academic world at large, such chairs have been regarded as the recognition of outstanding scholarship. You, however, feel that they should serve the more pressing needs of the university administration, believing that anyone who makes scholarship a major part of his interests should be content with a Readership … I believe that this concept will be damaging to the university.' (Draft of message to Dean of the Faculty of Social Sciences, following a meeting with the Vice-Chancellor, initialed by MMG, Feb. 1992). MHS, Gowing Papers, Kent File.

[89] Institution of Mechanical Engineers, Hinton Papers J 21, Gowing to Hinton, 28 March 1971.

pronounced it 'a book of first class importance'.[90] Bullock offered to help Gowing, despairing of Kent, find a new job—an offer he repeated in January 1972:

> I think you have written some of the best contributions of 20th century history I have read and I am convinced the further volumes will establish … your reputation as one of the leading contemporary historians in the English-speaking world. How to cash in on this and turn it into the sort of job you want? If there is any job you see for which you would like my support, you can rely on me to write enthusiastically about your work … I beg you not to lose heart. I cannot believe that work as good as yours can go unrecognized for long when the next two volumes are published.[91]

Bullock began to enquire about possibilities at Oxford, including research fellowships at Nuffield and St Antony's. Kent had become a problem, and Gowing looked for a solution.

Oxford revisited

In February 1972, Oxford University advertised a chair in the history of science, the first in the university's long history. Despite having rich scientific traditions, and the oldest science museum in Britain (and one of the oldest in the world), Oxford had few students and fewer dons who took a professional interest in the subject. But the need to do something for the subject was recognised, and in 1953 the Faculty of Modern History established a university lectureship, in accordance with its practice of creating posts in small subjects not already covered by the college system. The appointment went to A. C. Crombie, an Australian-born biologist with an omnivorous interest in the history of science, then a lecturer at University College London.[92]

At a time when England boasted few professional historians of science, Crombie brought Oxford an impressive reputation. Following early academic work in physiology in Australia and at Cambridge, Crombie had been identified with the new discipline since the 1940s. He helped establish the British Society for the History of Science in 1947, and was the first editor of the *British Journal for the Philosophy of Science* in 1950. In 1952, he published *Augustine to Galileo,* which became one of the best-

[90] MHS, Gowing Papers, Jobs and Applications, CV 1972.
[91] MHS, Brown Archive Box, Oxford Professorship File, Bullock to Gowing, 22 Jan. 1972.
[92] For the early history of science at Oxford, see Robert Fox, 'The History of Science, Medicine and Technology at Oxford', *Notes and Records of the Royal Society*, 60 (2006), 9–83.

selling textbooks in the history of medieval and early modern science.[93] This he followed in 1953 with *Robert Grosseteste and the Origins of Experimental Science, 1100–1700*, which elaborated his view of science as a quintessentially rational activity, with a logic and dynamic of its own.[94]

During the mid-1950s, under Crombie's direction, the subject had developed steadily, with five to seven graduates each year reading for a one-year Diploma; and by 1957, five-to-ten science undergraduates were taking a Supplementary Subject offered in the history of scientific thought. From 1958, undergraduates reading chemistry could also write on the history of chemistry for Part III, whilst a few read for the B.Phil. in Philosophy either in Greek mathematics or medicine, seventeenth-century physics, or nineteenth-century biology.[95]

In seeking ways to develop the history of science, Crombie was ambitious for himself, and for Oxford. In 1962, with Michael Hoskin, his contemporary and counterpart at Cambridge, he launched a new professional journal, *History of Science,* which attracted wide attention across the fledgling field. In 1963, with Rom Harré (recently appointed University Lecturer in the Philosophy of Science), Crombie convened at Oxford a massive international conference on 'The Structure of Scientific Change', fresh on the heels of the publication of Thomas Kuhn's *Structure of Scientific Revolutions*, and remembered still as one of the most significant congresses in the discipline since the Second World War.[96] From overseas, these efforts were seen as almost unprecedented acts of cooperation between the ancient universities, and between Oxford and the rest of the world; and brought Crombie a degree of international celebrity he warmly desired and fully deserved.

[93] J. D. North, 'Alistair Cameron Crombie (1915–1996)', *Proceedings of the British Academy*, 97 (1998), 257–70 at 259; A. C. Crombie, *Augustine to Galileo: the History of Science, AD 400–1650* (London, 1952 and 1959).

[94] A. C. Crombie, *Robert Grosseteste and the Origins of Experimental Science, 1100–1700* (Oxford, 1953). These views he elaborated in a lengthy (3 vols.) account, which took nearly thirty years to write, and which was published after his retirement, two years before his death in 1996: A. C. Crombie, *Commitments and Styles of Scientific Thinking in the European Tradition: the History of Argument and Explanation, especially in the Mathematical and Biomedical Sciences and Arts* (London, 1994).

[95] A University Committee for the History and Philosophy of Science was established in 1958. See Archives, Faculty of Modern History, Oxford University, MH (83) 101—letter from Dr Crombie (n.d., *c.*1983). Ref FQ 7/1/HM. For a recent appreciation, see Robert Fox, 'The History of Science, Medicine and Technology at Oxford', published online, and repr. in *Notes and Records of the Royal Society*, 60 (2006), 69–83.

[96] Conference papers and commentaries appeared in A. C. Crombie (ed.), *Scientific Change: Historical Studies in the Intellectual, Social and Technical Conditions for Scientific Discovery and Technical Invention* (London, 1963).

From the early 1960s, Crombie argued that a chair in the history of science was needed to stimulate the subject, as well as to complement Oxford's traditional strengths in the philosophy of science.[97] By 1964, History undergraduates could take a Special Subject on the Scientific Revolution of the seventeenth century. This attracted between eight and ten students each year. But in a period of rapid growth in the discipline, and increasing interest in the history of science to help bridge the 'gap' between C. P. Snow's 'Two Cultures', Oxford's modest course offerings did not go far enough. To achieve his objective, Crombie needed allies. His careful cultivation of American scholars at his conference of 1963 gave him international stature. But this seemed to count for less in Oxford, where he enjoyed some support in the Natural Sciences, but little in Modern History, where any such chair was bound to be placed. Worse, he had an enemy in Hugh Trevor-Roper (later Lord Dacre), then of Christ Church and later (as Regius Professor) of Oriel. Trevor-Roper fumed against historians of science, whom he collectively dismissed as 'antiquarians'—that is, 'historians of science who knew science, but not history'.[98]

Nonetheless, the subject grew steadily in popularity and, from the early 1960s, students reading for diplomas and higher degrees rose from seven to thirty-two.[99] Recognising that 'a higher post seems essential to the teaching of a subject of such growing importance to the History School', the Faculty of Modern History twice accorded the chair 'Priority 1' in its submissions to the University Grants Committee for funding in the quinquennia 1962–7 and 1967–72. In 1971 the Faculty's application was successful, and in January 1972 a chair was finally advertised. After a decade-long campaign, Crombie rejoiced. Looking back, an external observer, unfamiliar with the ways of Oxford, and knowing nothing of the Faculty, could be excused for thinking the chair to be his for the asking.

Such, however, was not to be. On paper, Crombie was the outside favourite. His twenty years at Oxford had seen some fifty students take the Diploma in the history and philosophy of science, and some thirty arts and science undergraduates read for special subjects. But Crombie had few friends. His missionary fervour for his subject, conflated with per-

[97] Dacre Papers, Trevor-Roper to Sir Peter Medawar, 16 April 1970; Blair Worden to author, 7 Jan. 2005. I warmly thank Professor Worden for making these letters available to me.
[98] Dacre Papers, Trevor-Roper to Sir Peter Medawar, 16 April 1970.
[99] Archives, Faculty of Modern History, LE/7, Professorship of the History of Science, Quinquennial Submission, 1967/72, p. 15. I am grateful to Mr A. P Weale, Secretary of the Faculty of Modern History, for permission to consult these files.

sonal ambition, had not made him popular.[100] His critics were quick to find fault. He was not a natural lecturer; he was said to show little patience with undergraduates, and was thought opinionated and pedantic.[101] His faux-English mannerisms masked a certain bunyip arrogance. The chair was by no means his for the asking.

Within days of the advertisement appearing in the press, and knowing well her unhappiness at Kent, Sir Rudolf Peierls alerted Gowing, and Nicholas Kurti rang, suggesting she apply.[102] The deadline was 20 February. Gowing was intrigued, but thought her chances poor. In the event, she applied only at the last minute, with Lorna Arnold rushing to get the application in the post.[103] The Board of Electors met to review applications on 3 March. Gowing's *curriculum vitae* was impressive but, by modern standards, incomplete. By way of publications, she could offer her books with Hancock, but these were in economic history, and were by now decades old; more recently, she could offer *Britain and Atomic Energy*, but even that had appeared eight years earlier. *Independence and Deterrence*, which in any case was co-authored with Arnold, was still in proof.

There were eight applicants. To her surprise, Gowing was one of the four interviewed. Hinton was among her powerful referees, and Hancock coached from the benches.[104] On 26 May, she met the electoral board of nine, chaired by Alan Bullock, then Vice-Chancellor.[105] On the science side, there was Rudolf Peierls, her champion, and Frederick Dainton, who knew her work; among the historians, Peter Mathias, who shared her

[100] North, 'Alistair Cameron Crombie (1915–1996)', pp. 264–5.

[101] 'Had Crombie taken a narrower view of his subject', his biographer writes, 'he might have avoided the common complaint that he was empire-building'. North, 'Alistair Cameron Crombie (1915–1996)', p. 264.

[102] Lorna Arnold, Interview with Tony Simcock, 25 Aug. 1999. I am grateful to Dr Simcock for permission to use his notes of this interview.

[103] Institution of Mechanical Engineers, Hinton Papers, J 21, MG to Hinton, 4 June 1972; 'I should not have dreamt of applying for the history of science chair if Rudi Peierls had not written urging me to do so. I dreaded the interview as my ignorance seemed fathoms deep. But I was able to relax because of you and Alan Bullock's kindness'. Dacre Papers, Gowing to Trevor-Roper, 2 Sept. 1988.

[104] MHS, Gowing Papers, Brown Archive Box, Oxford Professorship File, Hancock to Gowing, 4 March, 16 April 1972.

[105] The Board of Electors comprised Alan Bullock, J. B. Bambrough (Lincare), Dr T. G. Halsall (Linacre), Professor Hugh Trevor-Roper, Sir Rudolf Peierls, Professor Peter Mathias, and Sir Frederick Dainton, FRS (Professor of Chemistry, soon to be chairman of the University Grants Committee). The external assessors included Professor A. R. Hall (Imperial College) and Professor William (later Sir William) Paton, FRS, Editor of *Notes and Records of the Royal Society*, and member of the Wellcome Trust. I am grateful to Mr A. P. Weale for this information.

interests, and Trevor-Roper. To her surprise, Trevor-Roper took her part. Possibly he warmed to the idea of a chair going to a working class scholarship girl.[106] In any case, he was vehemently anti-Catholic.[107] And Crombie, the internal candidate, was a Catholic.

'I was in a blue funk by the time I got to the electoral board,' Gowing later told Christopher Hinton, 'however, once having got my sea legs, I quite enjoyed it.'[108] The affair was, Peierls told her later, 'touch and go', but she 'got it on the oral'. Kurti was a 'little surprised', and thought the 'pundits would have elected someone devoted to looking out obscure facts about Newton, Harvey, Boyle *et al*.'.[109] A. Rupert Hall[110]—the distinguished historian of science, then at Imperial College, acting as an external elector—supported Crombie. In reaching the final decision, Alan Bullock, the chairman—who alone on the Board had read Gowing's (and Arnold's) book in draft—played an influential role.[111] When votes were cast, Crombie lost. The Board appointed to Oxford's first chair in the history of science a person who had degrees neither in science nor in the history of science; the first woman to be a professor in the history of science in Britain; and one of the few women then to hold a chair in any subject at the university.[112] Modestly, Gowing said she had not expected to get the job:[113] 'If anybody had said I would one day be a professor of the history of science, I would have said they were crazy … I dropped both subjects at school.'[114] But the die was cast.

Election to the Oxford chair marked a turning point in Gowing's life, and potentially a turning point in the history of the discipline in England. Academically, it amounted to a vindication of her contribution to a national discourse. Institutionally, it revealed the high regard in which she

[106] Blair Worden, 'Hugh Redwald Trevor-Roper, 1914–2003', *Proceedings of the British Academy*, 150, *Biographical Memoirs of Fellows*, VI (2007), 247–84 at 257.
[107] Ibid., p. 256.
[108] Institution of Mechanical Engineers, Hinton Papers, J.21, MG to Hinton, 4 June 1972.
[109] Gowing Family Papers, Giana Kurti to Nik Gowing, 30 Nov. 1998.
[110] For an appreciation, see David Knight, 'Rupert Hall (1920–2009), pioneering historian of science and editor of Isaac Newton's letters', *The Guardian*, 27 May 2009, and the memoir in this volume by Frank James.
[111] Institution of Mechanical Engineers, Hinton Papers, J 21, MG to Hinton, 4 June 1972: 'Alan Bullock told me … I'd done a marvelous interview.' MHS, Gowing Papers, Metal Box. 'One of the episodes of my period of office … which I look back on with most satisfaction was your appointment.' Bullock to Gowing, 4 May 1978.
[112] Institution of Mechanical Engineers, Hinton Papers, A 123, MG to Hinton, 4 June 1972.
[113] 'No one except the British Society for the History of Science was more surprised than I when I was appointed.' Dacre Papers, Gowing to Trevor-Roper, 2 Sept. 1988.
[114] This quotation dates from an interview in 1986 (if not earlier). See her obituary in the *Oxford Times*, 27 Nov. 1998.

was held by contemporary historians, as well as by the community of nuclear physicists, who were among Britain's most influential scientists. In university terms, her election sent a message to the world—that Oxford, struggling to modernise, could do just that, when opportunity arose.

Gowing's election struck a conspicuous blow for modern, as against medieval and early modern, science, and for a reading of history that favoured social, economic and political perspectives, as against the examination of scientific practice. Some American historians, including a few who had thought to apply but who were put off by the salary, were reportedly nonplussed. A Cambridge friend warned her that 'Oxford may give you a bitter welcome'.[115] Still, Gowing was at last free of Kent and, moreover, going to a place that set the highest value on academic achievement.

The UKAEA was pleased with the appointment, as it seemed to augur well for her writing:[116] 'I hope to write another installment of the saga,' she assured Lord Plowden, former chairman of the AEA (1954–9) in October 1972. However, she added cautiously, 'It will not be immediately because (to my surprise) I have been appointed to a new chair in the history of science at Oxford from January 1973, and I must concentrate on that for a time. But it is important to begin collecting evidence and once Oxford is under control, I should have more time for writing.'[117] To Roger Makins (later Lord Sherfield), Chairman of the UKAEA, she was even more cautious: 'I am looking forward to Oxford with enthusiasm and some panic. I am anxious to bring the history of science firmly into the mainstream of history and get "ordinary" historians interested in it. To do this, it is necessary to give some good lectures even if only a handful of students turn up at first.' 'At present', however, she added thoughtfully, 'I can't see when I shall write them.'[118]

Gowing's caution was well founded. She left Kent in November 1972, and arrived in Oxford in January 1973. With memories of Kent's limitations fresh in mind, she had expectations of Oxford that belied the reality. Oxford gave its new professor a generous salary. But there was no actual department, no secretary, no research funds, and no office. Her first desk

[115] MHS, Gowing Papers, Brown Archive Box, Oxford Professorship File, to Margaret, 7 June 1972.

[116] MHS, Gowing Papers, Brown Archive Box, Oxford Professorship File. 'All of us here will be delighted that in this one instance your judgement was at fault,' wrote A.M. Allen of the UKAEA (7 June 1971). Congratulations from over twenty well-wishers are preserved in the files.

[117] MHS, Gowing Papers, Oxford Professorship File, Gowing to Plowden, 18 Oct. 1972.

[118] MHS, Gowing Papers, Oxford Professorship File, Gowing to Sherfield, 31 Aug. 1972.

was in a room at the top of the Registry Annex; but ultimately she acquired a small space at the top of the Indian Institute, above the Faculty library, five floors without a lift. The chair was attached to Linacre, a recently established graduate college, which offered an air of informality she welcomed, and an absence of undergraduates that seemed to suit her well.[119] Almost immediately, she took to Linacre, and Linacre took to her, and many happy memories survive.[120]

During the next two decades, Linacre became the principal college for Oxford postgraduate students in the history of science. Gowing inherited few students, and had to build her own flock from scratch. Overall, Oxford enrolled about twenty research students in various fields of the history of science, but their supervision was distributed between the History Faculty, the Museum, and the newly established Wellcome Unit for the History of Medicine.[121] There was no university-wide core course for postgraduates in the history of science, and few research students in History were interested in the history of contemporary science. For History undergraduates, there was a Special Subject, and in Science, a two-term course, with one term in philosophy of science and one in history of science. College dons could let their undergraduates take these courses, but few did. To advance the subject across the university, Gowing would have to enlarge the existing Special Subject, and to persuade at least one faculty to accept a new graduate degree. But the Faculty Board of Modern History had little reason to create courses for which there were no tutorial funds. The School of Natural Sciences was reluctant to create a graduate course that was principally concerned with History and Philosophy. Administratively, the history of science lacked institutional autonomy. Much to her annoyance, Gowing's first attempt to chair her own faculty committee was overruled by a policy that gave the Faculty the right to appoint the *ex-officio* chairman. Crombie continued as a lecturer in the subject, doing much of the

[119] In 1962, Linacre had elected to its fellowship Dr Rom Harré, University Lecturer in the Philosophy of Science, who advocated a close association with the history of science. In 1965, Francis Maddison, Curator of the Museum, was also elected a Fellow. In 1971, following unsuccessful attempts to raise external funding to establish a college-based enterprise in the social studies of science (as at Sussex University) the college secured the chair of the history of science, on the grounds of its 'special interest in interdisciplinary studies'.

[120] The Master of Linacre, John Bamborough, became a good friend. See Robert Fox, 'Linacre and the History of Science', *Linacre News*, Issue 27 (Spring 2004), 4–5.

[121] The Wellcome Unit for the History of Medicine was established in 1972. The Wellcome Trust paid (but did not appoint) its director. Administratively, the Unit came under the Faculty of Modern History, in cooperation with the Faculty of Medicine.

same teaching as before, leaving Gowing a narrow window through which to develop student support.

All this added up to a less than optimistic prospect.[122] Gowing's task was to develop the history of science. As Oxford professors lecture, but do not tutor, and she had few natural allies amongst the History dons who furnished her undergraduate numbers, her best strategy was to develop a graduate degree. But for this, through no fault of her own, she was singularly ill-equipped. Her innocence of the subject that she was appointed to teach she once shared with the Oxford University Scientific Society, where she disarmingly observed that 'I think it would be very unfortunate if the history of science becomes the preserve of people who say we can't study the subject because we have no scientific or mathematical training.'[123] Not only had she—*pace* her distant dealings with the Vice-Chancellor of Kent—no administrative experience, she also had an arms-length relationship with students. Most important, perhaps, she lacked basic training in the language, methods, and ideas that dominated professional practice in the rapidly changing discipline of the history of science, and knew little of the many professional projects that were making headway throughout the world.

All this she fully acknowledged. To Hinton (and possibly others) she appealed for 'tuition, literally from scratch—in electricity, history of, all the way …'[124] Once the initial surprise of her appointment had passed, colleagues rallied round—packages of books, journals, and course reading lists were sent her from Edinburgh and Sussex—in the sure knowledge that the Oxford chair was, and would rightly be seen as, the jewel in the crown of the profession in Britain.[125] Hancock also sent her references to articles on 'science and society'. Gowing read quickly, if unsystematically, into the subject matter of her newly acquired and rapidly moving discipline—which in Cambridge was eventually to have several chairs to Oxford's one.

On the personal side, domestic matters at first claimed much of Gowing's time in Oxford. House hunting proved a challenge until she found a home, first at 25 Hayward Road, and later at 5 Northmoor Road.

[122] MHS, Gowing Papers, CBE file, Dorothy (?) to Gowing, 5 June 1981.
[123] MHS, Gowing Papers, Brown Archive Box, 'Early Days in Oxford', Interview with the Oxford University Scientific Society, 1972.
[124] Institution of Mechanical Engineers, Hinton Papers J21. MG to Hinton, 4 June 1972.
[125] The Cambridge chair in the philosophy of science was then held by Mary Hesse, FBA. There were at the time several Readerships but, outside University College London, no other established chairs in the subject in England.

Living alone and out of college, she seldom entertained.[126] Once a routine had been established, academic life was enjoyable. Hancock advised, '*à bas* all Crombies! … don't use up adrenalin on their account',[127] and diplomatic relations with Crombie were simplified when he went on sabbatical leave the term she arrived. Rupert Hall advised her to treat him kindly, and so she did,[128] although for the next decade, until his retirement in 1983, they had little to do with one another, either socially or professionally. Crombie remained the sole lecturer in the 'department' that Gowing never had.[129]

In her first full teaching year (1973), progress was slow. As ever, Hancock was full of advice: 'By now', he wrote in May 1973, 'you will be nearly through your summer term's lectures. Numbers don't matter if the teaching is good. Anyway, numbers may rise in later years. And soon your house will be in order and Oxford—always a slow welcomer—will be growing more human.'[130]

She made no secret of her reform agenda. To Alan Bullock's joy, her Inaugural Lecture—'What's Science to History or History to Science?', delivered in 1975—gave promise of a brave new world, with Oxford at its pinnacle. 'Science and history', she said, 'are divided not by deep chasms but by man-made frontiers.'[131] Despite the decades since C. P. Snow's memorable assault on the 'Two Cultures', her message still resonated across the land. Regrettably, at Oxford, the cultures were more deep than she imagined, and the trenches dangerous to cross.

Not unexpectedly, Gowing used her lecture to criticise the 'academic isolation' that was the 'painful experience of some newcomers to Oxford', and noted that the decentralisation of undergraduate teaching among the colleges made curricular reform 'peculiarly difficult'. If the history of science were to thrive, it would need a larger place in the examinations. But there was the rub; this would require her listeners in the History Faculty to 'Be not afraid of science.' The second half of her lecture argued that 'history and science intermingle and cannot be separated by tenses', and that the politics of science must be part of History. She approved of the

[126] Although when she did, it was much appreciated, especially by her research students. Pers. comm., Dr Peter Morris to author, 31 May 2006; pers. comm., Dr Catherine Crawford to author, 2006.
[127] MHS, Gowing Papers, Hancock File, Hancock to MG, 31 Jan. 1974.
[128] MHS, Gowing Papers, Oxford Professorship File, Rupert Hall to Gowing, 22 June 1972.
[129] North, 'Alistair Cameron Crombie (1915–1996)', pp. 264–5.
[130] MHS, Gowing Papers, Hancock to MG, 22 May 1973.
[131] Margaret Gowing, 'What's science to history or history to science?' *Inaugural Lecture delivered before the University of Oxford*, 27 May 1975 (Oxford, 1975), 25 pp.

recent administrative separation of the history from the philosophy of science, and welcomed the history of technology, economic history, and politics, in shifting the terminal date of the Modern History syllabus beyond 1939. Doffing her hat to Peter Medawar, she insisted that 'Whether we like it or not, science—the art of the soluble—is inextricably linked with politics—the art of the possible.' With perhaps a glance at her colleagues in the History of Science Museum, the discipline, she said, had 'tended to be an esoteric profession in the past, too often uncongenial to mainstream historians and scientists alike'. Divisions between 'internalists' and 'externalists' were unfortunate, and unnecessary. Collaboration between science and history was urgently required. Offering perhaps too generous a hostage to fortune, she concluded with a promise: 'If we do not achieve this collaboration by the time I leave this chair, I shall have failed to fulfil the purposes for which it was established.'[132]

By the late-1970s, Gowing had developed a lecture course in the history of science in the nineteenth and twentieth centuries that, with minor modification, continued to serve through the 1980s. To these, she recruited Allan Chapman (an erudite expert in the history of astronomy), Paul Weindling (then a promising research student in the history of medicine and biology, later a professor at Oxford Brookes), and Nicolaas Rupke (later a distinguished professor of the history of science in Göttingen). With Lorna Arnold, she contributed to a Nuffield project on Science and Society,[133] and convened seminars with colleagues—including Alastair Buchan in 1975 on 'Science Technology and the International System'.[134] Less happily, she did not keep up with rapid movements in the history of science, such as at Leeds, Durham, Sussex, Kent, Lancaster, and Edinburgh, and was almost entirely ignorant of developments in Europe, the United States and Australasia that were reshaping the discipline. Indeed, what she did not follow she tended to reject, sometimes to the professional cost of colleagues whose work she disliked, or whom she thought fell short of her high standards. As correspondence in her papers reveals, in not supporting colleagues for grants or promotion her word as an Oxford professor was often taken as definitive, whether or not the assessment expressed was well informed.[135]

[132] Ibid., pp. 4, 11, 14, 17, 23, 25.
[133] Margaret Gowing and Lorna Arnold, *The Atomic Bomb*; *Science in a Social Context (SISCON) Unit No. 3* (London, 1979), 56 pp.
[134] Institution of Mechanical Engineers, Hinton Papers, F 85, Oxford Seminar, 17 Nov. 1975.
[135] MHS, Gowing Papers, Perrier Box, Alphabetical Files; Promotion Files.

Research students did come her way, and some became friends, although, living alone, Gowing found it difficult to combine professional life with domestic entertaining.[136] Much less friendly were the unwritten rules of the university, with its predominantly masculine and traditional biases. As she learned, academic life at Oxford, as elsewhere, revolves around strategic alliances. Some, knowing nothing of the actual circumstances of her appointment, found it convenient to see her as the 'scientists' candidate', and her success in a competition run by an Arts Faculty as a victory for Science. Others regarded her as a mere archivist,[137] or, as one put it privately, Hancock's 'best research assistant'. Her powerful allies in Physics had few counterparts in History, even among the economic historians, who might have been expected to offer her sanctuary. Peter Mathias (All Souls) and Hugh Trevor-Roper (Oriel) remained good friends, but were not always there to support her discipline. Perhaps her closest academic colleague was Charles Webster (Corpus), the distinguished historian of science and medicine, who had arrived from Leeds the same year as she, as Oxford's first Reader in the History of Medicine and Director of the Wellcome Unit for the History of Medicine.

Gowing and Webster cooperated closely in university affairs.[138] For her part, Gowing supported Webster and his unit against what she called the 'forces of darkness', among which she counted, at one time or another, William Paton, Rupert Hall, and various Wellcome Trustees.[139] Webster reciprocated with generous advice on a wide range of issues, including student supervision, promotions, and appointments. Gowing thought Webster the best living British historian of early modern science and medicine. At the time, he was also hard at work on the official history of the National Health Service, a task for which she had both personal sympathy and professional respect.[140] She hoped Webster would succeed her on her retirement.[141]

[136] Lorna Arnold recalls Gowing saying (more than once) that what she needed most was a wife. Memo Arnold to author, 2004, Section 9, p. 7.

[137] Pers. comm., Dr Peter Morris to author, 31 May 2006.

[138] Gowing Family Papers, Box 3, Webster to Nik Gowing, 12 Nov. 1998 and 12 July 1999.

[139] Gowing Family Papers, Box 2, Gowing to Hugh Trevor-Roper, 28 July 1986.

[140] Webster's memorable study of the Baconian tradition, *The Great Instauration: Science, Medicine and Reform, 1626–1660* (London, 1975; New York, 1976; 2nd edn., Bern, 2002) grew from his earlier lectures at Leeds. At Oxford, he continued his work in early modern science, while completing *Problems of Health Care: the National Health Service before 1957* (London, 1988) and *Government and Health Care: the National Health Service, 1958–1979* (London, 1996). A further study, *The National Health Service: a Political History* (Oxford, 1998, 2nd edn., 2002), was followed by a celebrated return to early Modern Europe: *Paracelsus: Medicine, Magic, and Mission at the End of Time* (New Haven, CT, 2008).

[141] Gowing Family Papers, Box 2, Gowing to Hugh Trevor-Roper, 28 July 1986.

Contemporaries were sometimes surprised to find that in Trevor-Roper Gowing found an improbable, but loyal, ally.[142] Their friendship—polar opposites on the political and social spectrum—was a mystery to those who cared to think twice about it. Possibly it was nourished by a shared, anti-elitist (or at least contrarian) view of academic *mores;* possibly they shared a dislike of the 'new Right'.[143] But there was also a shared respect for the integrity of scholarship. Years later, Gowing expressed her thanks to Trevor-Roper for his help in making 'the history of science real history, rather than a public relations exercise of failed scientists'.[144] Such praise has failed to find its way into recent scholarship on Trevor-Roper, but its deeper dimensions are worth exploring.

By way of contrast, from the curators of Oxford's glorious but introspective Museum of the History of Science Gowing preserved a professional distance. Their reaction to her appointment was courteous, but not over-friendly. Her response was to keep calm and carry on. She had much work to do. Hancock advised, '… don't, for heaven's sake, remain perpetually submissive to deadlines. They are incompatible with civilised living.'[145] Such sensible advice, which she ignored. Between 1972 and 1973, she and Lorna Arnold struggled to complete a text for vetting. There seems to have been no pressure to publish with HMSO. So, encouraged by Alan Bullock, Burke Trend (formerly Head of the Cabinet Office), and Richard Hewlett, the historian of the American Atomic Energy Commission,[146] she asked Tim Farmeloe at Macmillan, which had done well with her first book, to send it out widely for review. Significantly, perhaps, Gowing signed her Preface as from Linacre College, where she had been made welcome, rather than from the Faculty of Modern History, where she had few friends.

The two volumes of *Independence and Deterrence* appeared in November 1974,[147] and were received with great fanfare—perhaps not quite as much

[142] 'I was very scared when I came to Oxford,' she wrote to him years later; 'I hardly knew it at all and I also felt a phoney in the history of science. Your unfailing kindness, helpfulness and support made an enormous difference and I am deeply grateful.' Dacre Papers, Gowing to Trevor-Roper, 19 May 1980.

[143] Dacre Papers, Gowing to Trevor-Roper, 20 Dec. 1983. They joined forces in a much publicised contretemps with Lord (John) Vaizey, concerning his criticism of Gowing's wartime heroes. See Vaizey's *In Breach of Promise: Gaitskell, Macleod, Titmuss, Crosland, Boyle: Five Men who Shaped a Generation* (London, 1983). Vaizey died the following year.

[144] Dacre Papers, Gowing to Trevor-Roper, 2 Sept. 1988.

[145] MHS, Gowing Papers, Hancock File, Hancock to MG, 31 Jan. 1974.

[146] MHS, Gowing Papers, I&D File, Burke Trend to Gowing, 31 Oct. 1974; Hewlett, 6 Dec. 1974.

[147] Margaret Gowing, assisted by Lorna Arnold, *Independence and Deterrence: Britain and Atomic Energy, 1945–52, Vol. 1: Policy Making; Vol. 2: Policy Execution* (London, 1974);

as greeted her first book, but enough to satisfy Hancock and Makins,[148] the UKAEA, and probably Gowing and Arnold as well.[149] Complimentary reviews appeared in *The Guardian*, *New Society*, and the academic press. Even *l'Express* and *Le Figaro* published notices. Thanks to the Insight team, which did a double-page spread on Gowing and her work, for two glorious weeks, Michael Howard wrote, 'you had the *Sunday Times* virtually to yourself'.[150]

Dividing her story into two parts, the first volume was concerned with 'why' and the second with 'how' Britain had developed its atomic project from the end of the war in 1945 to its first weapons tests in 1952. The story was, in her words, 'woven into almost every part of the post war history of Britain, and involved almost every layer of government, military and civil'. Although not part of the new series of peacetime official histories underway in the Cabinet Office, it was the first official history for the post-war years authorised for publication by Her Majesty's Government. Even so, in her account, there were significant omissions. No attention was given to the wider context of the Cold War, nor to the highly sensitive area of nuclear intelligence, where discussion of the 'Fuchs incident' and the 'Cambridge spies' was still highly topical, and secret. Still, within her chosen compass, Gowing had enough to say. She took few hostages, and none by name. Her overriding theme in volume one—on which Makins (by then Lord Sherfield) seems to have agreed—was that critical decisions had been taken without adequate consultation; that British considerations of British self-interest had been sacrificed to the goal of closer collaboration with the US; and that this goal was not attained, because it was unattainable. In the post-war period, British nuclear diplomacy had mirrored British foreign policy—to the dismay, and eventual disarray, of both.

Kenneth Younger, reviewing *Indy* in *Nature*, took Gowing's readings as read, and marvelled how she and Arnold had so clearly shown that the key nuclear decisions in the years 1945–52 had been taken—in secret by a small circle around Attlee, Bevin and Morrison—and executed in ways that now seemed profoundly muddled, even chaotic. Makins and Hinton agreed that much had been a muddle, but how much more it would have

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separately (and subsequently) published: *Independence and Deterrence: Britain and Atomic Energy, 1945–52: References to Official Papers* (London, April 1983).

[148] MHS Gowing Papers, I&D file, Hancock to Gowing, 4 Dec. 1974—a 'handsome job of book production'. Makins to Gowing, 26 Nov. 1974, 'I am sure they will be a big success.'

[149] MHS, Gowing Papers, I&D File, Arnold listed forty reviews.

[150] MHS, Gowing Papers, I&D File, Michael Howard to Gowing, *c*.26 Nov. 1974.

been so, they said, had Britain's atomic policy actually been considered by the full Cabinet. Apologetics were the order of the day.

Gowing revealed how, and why, Whitehall had persistently refused to confirm the link between Britain's civil and military programmes. She made public the fact that Calder Hall, Britain's first reactor, opened by Her Majesty the Queen in September 1956, was specifically designed to produce not only civilian electricity but also military plutonium. She revealed that the fire in 1957 at Windscale (now Sellafield, in Cumbria)—the world's first, and largest, nuclear accident before Chernobyl—neglected warnings received from Washington, DC, that underlined a continuing lack of consultation and communication.

Overall, Gowing revealed the failures of Anglo-American governments to share information, and demonstrated how Britain, having sacrificed Commonwealth and European ties for the sake of the 'Special Relationship', had been left to find its own, very expensive way forward in nuclear research and development. This was especially the message of volume two—how Britain, deprived of the cooperation it deserved, had nonetheless brought its 'enterprise' to a remarkably successful outcome.

Gowing's message was not warmly received by all in Government. Her revelation that the Americans 'led us up the garden path time after time' was not what the Foreign Office wanted to hear, or see read.[151] Some thought Gowing had indulged in hindsight. But she spoke from the written record and, in effect, told some of the nuclear barons (Sir William, later Lord, Penney among them) things they say they had never known.[152] For the first time, those involved in small parts of the story could now see the whole. Even those personally involved found material they had known of only second-hand.[153] The first archive-based account of post-war British nuclear policy instantly became required reading. When the second volume of the history of the American nuclear programme appeared the same year, Richard Hewlett warmly acknowledged her contribution to the Anglo-American story.[154]

However, the two volumes of *Indy* took that story only to 1952. The pity, as Hinton mournfully noted, was that it 'had to stop at a point where all that could be said for us was that we had produced an obsolete bomb

[151] AB 376, Circulation of Drafts, 1969. Penney, Imperial College, to Gowing, 27 Jan. 1969.
[152] Ibid.
[153] MHS Gowing Papers, I&D file, G. R. Strauss, MP, to Gowing, 4 Dec. 1974.
[154] See Richard Hewlett, 'Margaret Gowing (26 April 1921–4 November 1998)', *Isis*, 90 (1999), 326–8.

more slowly than the Russians'.[155] Britain had laid foundations for world leadership in a field 'that were so quickly lost'.[156] For Hinton, Gowing confirmed (a view from which Makins, the diplomat, dissented) that Britain had given America 'all our nuclear power technology in return for a ballistic missile that would not work'.[157] Such issues would not go away. Gowing more than hinted at the way in which the initial requirement of British Cabinet 'consent' for a British-based American nuclear deterrent was gradually diluted to mere 'consultation'—an issue that proved controversial in the 1980s, and may be so again.

To this pioneering work, a sequel was meant to come—not instantly, perhaps, but sometime soon—possibly again in two volumes. In the meantime, Gowing was optimistic. The science media made her a feminist pin-up. The *New Scientist* praised not only her book, but also the 'shining example of the liberated woman, who has managed to combine career and home successfully'.[158]

Given her overnight celebrity, Hancock advised Gowing to take time out—'for fallowing and for the pleasures of teaching, talking, dining, wining, reading, sleeping and lying in the sun before you throw yourself in to another battle against time'.[159] Hancock was displeased at the prospect of her engaging in 'more obsessive work', as he put it: 'Why not leave atomic energy to the young—teach, enjoy Oxford, make new friends and give yourself a fallowing period?'[160]

Wise advice, which Gowing ignored. The obligation (thanks to pressure from the UKAEA) weighed heavily. But how to organise the next volume, and what ground should it cover? All of '*Indy*' dealt with a period of only seven years. How to handle the next decade? One plan was to cover a similar period—the next seven years, 1952–9—between the 'Hurricane' tests that gave Britain the Bomb, and Britain's first H-Bomb test in 1958. This volume could be called either *Independence to Interdependence*, or *Interdependence Regained*, and would bring the narrative to a positive, if

[155] MHS, Gowing Papers, I&D File, Hinton to Makins, 8 May 1975.
[156] Ibid.
[157] Ibid.
[158] Sarah White, 'Nuclear historian'. Interestingly, Lorna Arnold—whose feminist credentials shone as brightly—was not mentioned in this essay, although she appeared as Margaret's co-author of an article following the interview, on 'Health and safety in Britain's nuclear programme', which was supremely Lorna's subject. Ead., 659–61.
[159] MHS, Gowing Papers, I&D File, Hancock to Gowing, 4 Dec. 1974.
[160] MHS, Gowing Papers, Hancock File, Hancock to Gowing, 26 April 1975.

fleeting closure, with the US/UK agreement between Macmillan and Kennedy that ended twelve years of nuclear estrangement.[161]

Another possible outline was given the title *Equipoise and Energy*, to cover the period 1952–63, in two volumes—the first, dealing with administrative and international events, including the all-important Anglo-American relationship, arrangements within NATO and the Commonwealth, the development of the H-bomb, the advent of nuclear submarines, the Partial Test Ban Treaty, and Britain's civil nuclear power programme—as well as the emergence of CND and the question of nuclear security. The second volume would complement this, with the consideration of several special topics, such as the Windscale accident in 1957, the development of nuclear health and safety standards, the fall-out debate, continuing weapon trials, the supply of uranium and other raw materials, the history of nuclear production programmes, and developments in fast reactor and fusion research.[162]

A third plan, equally ambitious—and possibly inspired by Lorna Arnold—was called simply 'Britain and Atomic Energy, 1952–1958', and is dated as late as November 1991. This outline covered similar ground, beginning with the origins of the UKAEA, the development of Harwell, the expansion of plutonium production (especially in the form of dual purpose reactors), the resumption of an 'unequal interdependence' with the United States, and the development of civil nuclear power and thermonuclear weapons. This version would also have traced the euphoria that first greeted nuclear power, but then fell victim to public scepticism, especially after Windscale; the role of atomic energy in international affairs; and the development of a civil energy programme, with special reference to health and safety. Finally, it would have looked forward to the changed world once the McMahon Act was amended, and would have considered the future of British policy after the American moratorium on atmospheric weapons testing in 1961.[163] Even so, there was no mention of nuclear strategy, or nuclear intelligence; and the 1991 outline left what would be the next 'natural' period, 1958 to 1978, in total darkness.

In fact, none of these three outlines—nor the third volume—was destined to appear. Indeed, 'volume three' failed to progress beyond the

[161] MHS, Gowing Papers, Perrier Box, Gowing to Sir Solly (later Lord) Zuckerman, 3 Dec. 1985.

[162] See Authority Historians Office (AHO) 2.1.1 Synopsis for AE History, 1953–59/60; MHS, Gowing Papers, Jobs and Applications, Annexe II 'Outline of next volume of the history of the British Atomic Energy Project' (n.d., but probably 1972–4).

[163] Draft Outline, Lorna Arnold to author, dated Nov. 1991.

outlines of 1972–3. Research continued on massive archives in many locations, driven by the indomitable Arnold,[164] but the book's strategic structure remained unresolved, and most of its text remained unwritten. Gowing continued to be retained as a consultant to the UKAEA, which, as before, expected her to come up to London and work steadily on the book. Increasingly, however, her energies turned in different directions. Following '*I&D*', Hancock prophesied that new opportunities would come her way ('How are the Templemans confounded', he trumpeted),[165] and he was right. In 1974, she was invited to give the Wilkins Lecture to the Royal Society,[166] and was appointed a member of the Lord Chancellor's Advisory Council on Public Records (1974–82). In July 1975, she was elected to the Fellowship of the British Academy—one of the few historians of science to be so honoured, her success again facilitated by Alan Bullock.[167]

In 1976, she was made a member of the BBC Archives Committee. This was followed by the award of honorary degrees from Leeds (1976), Leicester (1982), Manchester (1985), and Bath (1987). She delivered the Bernal Lecture at Birkbeck College in May 1977,[168] and in 1978 the Rede Lecture at Cambridge, in which she defended the utility of history against the undermining effects of secrecy, which in her view had distorted Anglo-American relations and undermined constitutional government in Britain.[169] In 1978 she began two years' strenuous work as one of the three members of Sir Duncan Wilson's Committee on Public Records (1978–81)—her appointment welcomed by Trevor-Roper, who thought it 'a great blow struck for the forces of Reason, Sense and Enlightenment'.[170] She was eminently qualified, as the only historian who had also been a Departmental

[164] See, e.g. Margaret Gowing and Lorna Arnold, 'Health and safety in Britain's nuclear programme', *New Scientist*, 28 Nov. 1974, 659–61.
[165] MHS, Gowing Papers, Hancock to MG, 26 April 1975.
[166] Margaret Gowing, 'Science, technology and education: England in 1870', Wilkins Lecture for 1977, *Notes and Records of the Royal Society of London*, 32 (1) (July 1977), 71–90; repr. in *Oxford Review of Education*, 4 (10) (1978), 3–17.
[167] MHS, Gowing Papers, Brown Box, Gowing to Bullock, 1 July 1975.
[168] Margaret Gowing, 'Science and politics', *The Eighth J. D. Bernal Lecture* (London: Birkbeck College, 17 May 1977), 16 pp. 'As all the previous lecturers were Bernal's (mostly Marxist) friends', she wrote to Roger Makins, 'I thought it time to break the party up.' MHS, Gowing Papers, Perrier Box, Gowing to Makins, 13 June 1977.
[169] Margaret Gowing, 'Reflections on Atomic Energy History', *The Rede Lecture, 1978* (Cambridge, 1978), 26 pp. at 14; repr. as 'Reflections on Atomic Energy History', *The Bulletin of the Atomic Scientists*, 35 (3) (1979), 51–4.
[170] MHS, Gowing Papers, Perrier Box, Trevor-Roper to Gowing, 21 Aug. 1978. Dacre Papers, Gowing to Trevor-Roper, 30 Aug. 1978. Duncan Wilson was Master of Corpus Christi College, Cambridge, a former Ambassador to the USSR.

Record Officer, and as a veteran of the Grigg Committee a quarter of a century earlier.[171] The Wilson enquiry took her to the United States, welcome travel, made onerous by a painful back. In 1979, she was invited to Jerusalem for the Einstein Centenary, where she was feted as one of Britain's leading science historians. Her back pain she bore stoically—as she did her lack of progress on 'volume three'.

As the decade ended, back pains were complicated by signs of a mysterious chronic illness that remained undiagnosed, but whose effects markedly slowed her down. Friends remarked that she returned time and again to call upon the same material, with variations for different audiences.[172] Reading her Rede Lecture back at her, Hinton teased, 'It is interesting, but you must be getting a bit tired of boiling the same cabbage over and over again.'[173] Lost time was a constant theme. To Nicholas Kurti, in December 1978, she lamented the effort she had devoted to the Contemporary Scientific Archives Centre [CSAC]—'it has involved for me a great deal of financial and staffing detail of the kind I especially dislike, (and which I said I would not do!), and after all I do not even have a secretary'.[174] It was hardly the first time. Perhaps illness was taking its toll.

In February 1979, in witness of a brave denial, Gowing assured Christopher Hinton that any fears that she was 'fed up' with atomic energy were totally unfounded, and promised him that she would retire from her chair in 1981, at the early age of 60, to concentrate on finishing 'volume three'.[175] She had been saying this since at least 1976, when she confided in Kurti that she might go even earlier 'if a good college research fellowship arose'. She repeated the point to everyone: 'I want to stay in Oxford but I must spend more time on writing atomic energy history—also important for posterity—and I want more time to see my friends and family.'[176] 'The

[171] MHS, Gowing Papers, Perrier Box, Gowing to Arnold Thackray, 11 Sept. 1978.

[172] See, for example, Margaret Gowing, 'Britain, America and the Bomb', Lecture given at the University of Leeds, 10 Oct. 1977, *University of Leeds Review*, 21 (1978), 50–65; developed in David Dilks (ed.), *Retreat from Power: Studies in Britain's Foreign Policy of the Twentieth Century, Vol. Two: After 1939* (London, 1981), pp. 120–37; rewritten for Michael Dockreill and John W. Young (eds.), *British Foreign Policy, 1945–1956* (London, 1989), and Margaret Gowing, 'How Britain produced the bomb: Anglo-American relations and the nuclear deterrent', *The Guardian*, 8 April 1985, p. 9.

[173] AHO 5, Articles, Reviews and Lectures, Hinton to Gowing, 25 June 1979.

[174] Bodleian Library, Special Collections, Kurti Papers, Gowing to Kurti, 18 Dec. 1978.

[175] Institution of Mechanical Engineers, Hinton Papers, H 32. Gowing to Hinton, 7 Nov. 1977.

[176] Bodleian Library, Special Collections, Kurti Papers, Gowing to Kurti, 19 April 1976. As to the future of her archival interests, she added, 'As long as I am in Oxford I would take an interest in the 'academic side' of the Centre (i.e. CSAC), but not a legal-financial responsibility. The RS is bigger, stronger and richer than me!'

trouble', she wrote to Hinton, 'is that I feel tired in my '50s and increasingly find it difficult to cope with no secretary—even for phone calls … I can't do more in a week than I do and even so I feel guilty over undone chores (and of friendships unpursued). I hope I shall get a clear run for 1981; I can't think how I did *I&D*.'[177]

In mid-1979, having completed six years at Oxford, Gowing took her first sabbatical—a visit to Canberra, where friends and admirers—including the Hancocks, F. B. Smith, Oliver MacDonagh, and Noel Butlin—made her feel welcome, even cherished. On her return, however, there was always 'the Book'. In September 1979, she delivered on a promise to herself, and applied for a Research Fellowship at All Souls. Hancock agreed that 'Election … would mean release from the strain which you have suffered without intermission for the last 30 years and more. You would do the things which you are bound to do professionally, and the things which you want to do as a person …'. [178] The Fellowship would also have given her a clear run at 'vol. three'.[179]

Election to the Oxford college where Hancock had thrice been a Fellow—however stuffy its reputation, and rear-guard its influence—would have pleased her greatly. However, her application failed—despite supporting letters from Bullock and Trevor-Roper, as well as Hancock.[180] The blow deeply dented her self-esteem. Failure in such a competition could be construed as personal rejection, anti-feminist prejudice, or even as a dismissal of the history of science. But in all likelihood, these considerations were irrelevant. Peter Mathias and Michael Howard, both Fellows of All Souls, would have supported her candidacy. But the contest was of epic proportions—with 175 candidates competing for a single place—and that the vote went to an internationally distinguished mathematical logician could easily be mistaken for something it was not.[181] Nonetheless, for Gowing, failure was a form of rejection, leaving a bitter taste that refused to go away.

During her years at Oxford perhaps Gowing's greatest satisfaction, if also her greatest frustration, came with her efforts for the Contemporary Scientific Archives Centre (CSAC). The preparatory work that began in 1967 under the aegis of a Joint Committee of the Royal Society and the Historical Manuscripts Commission was continued under a subcommit-

[177] Institution of Mechanical Engineers, Hinton Papers, F 198, Gowing to Hinton, 6 Feb. 1979.
[178] MHS, Gowing Papers, Hancock File, Hancock to Gowing, 9 Sept. 1979.
[179] Dacre Papers, Gowing to Trevor-Roper, 7 July 1979.
[180] MHS, Gowing Papers, Hancock to Gowing, 9 Sept. 1979.
[181] MHS, Gowing Papers, All Souls Fellowship.

tee of the Royal Society's British National Committee for the History of Science, Medicine, and Technology, which included representatives from the British Library, the Wellcome Trust, and the Council of Engineering Institutions. When, in 1972, the Wolfson Foundation gave a grant to establish a Centre—which, according to Gowing, neither the Royal Society nor the Historical Manuscripts Commission wanted to run—Gowing agreed to take it with her to Oxford, for three years in the first instance. Since the overall majority of 'eminent scientists' whose papers were to be surveyed and catalogued were Fellows of the Royal Society, Gowing continued to insist that the Royal Society should take responsibility for the project. This, however, Sir David Martin, the Executive Secretary, resisted, as did his successors. In the event, the Centre was launched with funds from the Royal Society, but also with grants from other sponsors, including the Wolfson and Pergamon Foundations and, later, the Ernest Cook and McRobert Trusts.

Work began in April 1973 with two salaried staff (Mrs J. B. Alton and Mrs Harriot Weiskittel), based first at Gowing's office in the Indian Institute, and then at 10 Keble Road. Within six years, following the principles established by Joan Pye of Harwell—a simple survey, not an elaborate cataloguing—sixty-two collections had been prepared, and the Centre had proved its worth.[182] Gowing recalled spending 'more time on the Centre than on anything else for my first two years at Oxford',[183] but gradually (and reluctantly, some said) she left her staff to get on with it. At her request, the Bodleian agreed to assign the two staff professional salary grades. This gave them due recognition, even if it committed the Centre to meeting their annual increments.

In 1976, when the Centre completed its first three years, Gowing discovered she had few prospects of further funding, as foundations typically limited their grants to single awards. Time and again, she appealed to prospective sponsors, and to Ronald Keay, who succeeded David Martin. Keay eventually agreed that the Royal Society should take over about half the cost, in the form of a line budget in its annual government grant.[184] With this in hand, Gowing generated matching grants from the Rhodes Trust, the Wolfson and Nuffield Foundations, and the Institution of Mechanical Engineers.[185] The Centre lived to fight another day. But in

[182] Gowing, 'The Contemporary Scientific Archives Centre'.
[183] Bodleian Library, Special Collections, Gowing Papers, Gowing to Sir William Paton, 15 July 1985.
[184] Ibid.
[185] Ibid.

1980 the Wellcome Trust, which had set up a medical archives project of its own, announced the end of its sponsorship, and the 1980s began with the Centre's future unresolved. Gowing's twice-yearly reports reveal her continuing anxiety: 'Is this really', she wailed to Kurti, 'what life in one's declining years should be comprised of?'[186]

In fact, the 1980s proved to be a busy mixture. In 1980, James was married, followed by Nik (at St Cross, Oxford) in July 1982. Both sons were successfully launched in life. In 1981, Gowing's work for the Wilson Committee on Public Records finished, and in 1983, her four-year term with the Lord Chancellor's Public Records Advisory Council came to an end. She was unhappy with the Wilson Committee's recommendations for the preservation of records, which effectively postponed further reforms for many years.[187] But Sir Richard Wilson, later Secretary of the Cabinet, spoke in glowing terms of her reputation throughout Whitehall.[188] In June 1981, she was appointed CBE—'a fitting reward for all your hard work', Alistair Crombie generously sang, and many chorused.[189]

In 1982, Gowing was invited to deliver the Herbert Spencer Lecture, on 'Science and Politics: an Old and Intimate Relationship', in which she reversed the 'popular image of a British Empire created and governed by Oxford Greats'. This, she said, 'obscured the pervasive role of those scientists, such as the botanists and the geologists who, with their professional institutions, were deeply involved with imperial and economic power …'. In time, politics embraced scientists—who proved 'both wise and foolish, both myopic and far-sighted, both judicious and ridiculous, both clear-headed and muddled. They turned out to be, indeed, remarkably like politicians.'[190] This was pontifical Gowing at her best—but her reflections on science and politics won her few new friends in either Faculty.

Her academic ribbons and honours—what Kurti called her 'alphabetical adornments'[191]—Gowing wore with sober grace. But these seemed to bring little satisfaction. Family and friends were especially dear, as were

[186] Bodleian Library, Special Collections, Kurti Papers, Gowing to Kurti, 2 Dec. 1982.
[187] MHS, Gowing Papers, Perrier Box, Gowing to Sir Solly Zuckerman, 3 Dec. 1985.
[188] Gowing Family Papers, Box 3, Sir Richard Wilson to N. Gowing, 18 Nov. 1998.
[189] Gowing Papers, CBE file. Her well-wishers included Asa Briggs, Kenneth Lucas, Sir Michael Perrin, William Marshall, and Michael Howard.
[190] Margaret Gowing, 'Science and politics: an old and intimate relationship', in Vernon Bogdanor (ed.), *Science and Politics: Herbert Spencer Lectures, 1982* (Oxford, 1984), pp. 52–69; repr. in A. Boserup, L. Christensen and O. Nathan (eds.), *The Challenge of Nuclear Armaments: Essays Dedicated to Niels Bohr and his Appeal for an Open World* (Copenhagen, 1986), pp. 21–37.
[191] MHS, Gowing Papers, Kurti to Gowing, 4 July 1978.

memories of her past. The phrase 'She never forgot her roots' recurs in letters to and from those who knew her. In the academic world, however, she failed to present a smiling face. Apparently to create more time for writing, as she put it, she once considered letting her name go forward for the headship of an Oxford women's college. When this did not eventuate, she withdrew into a self-protecting silence. Her response to a similar suggestion made years later, a friend recalled, was a swift and firm 'no'. Bitterly, she wrote, that even 'if all the Fellows walked on their knees from the station to Northmoor Place to supplicate her, she would not change her mind'.[192] The record suggests they did not, nor did she.

Winding up, slowing down

'Death and disaster' were the leading words of Gowing's letter to Hancock in August 1982, reporting the death of George Allen, the economist, who had long been amongst her closest friends. Christopher Hinton's death followed in 1983. Gowing wrote moving memoirs of both.[193] In Oxford, she felt she could still call upon Peter Mathias, who shared her interest in science and society; and Michael Howard, whose long experience of journalism and military affairs gave them common cause. She continued a close friend of Charles Webster, who became a Research Fellow of All Souls in 1988. She greatly enjoyed a gossipy correspondence with Trevor-Roper, elevated to the peerage in 1979, who in 1980 swapped a fitful absence of harmony at Oxford for 'seven contentious years' in Cambridge.[194] The frustrations that he met as Master of Peterhouse recalled to Gowing her own struggles in Oxford.[195]

Gowing often repeated her plan to retire early, and clearly wanted to do so. The target year of 1981 conveniently coincided with the publication of the Wilson Report and the end of the Royal Society's grant to CSAC. But against early retirement loomed the prospect of a lower pension and, with it, came the logic of staying on until 1986, and age 65. Her younger son, James, needed financial help with his farm in the Orkneys; and she worried about the risks that her elder son, Nik, took when covering trouble

[192] Gowing Family Papers, Box 3, Brian (Eyre?) to Nik Gowing, 13 Nov. 1998.
[193] M. Gowing, 'George Cyril Allen (1900–1982)', *Proceedings of the British Academy*, LXXI (1985), 473–91.
[194] Worden, 'Hugh Redwald Trevor-Roper', p. 271.
[195] Dacre Papers, Trevor-Roper to Gowing, 10 Dec. 1983, and Gowing to Trevor-Roper, 20 Dec. 1983.

spots in the world for ITN and Channel 4 News, as senior correspondent and then Diplomatic Editor. As these tyrannies took their toll, Gowing's ability to focus seemed to ebb away. She fell prey to a kind of nervous exhaustion that her doctors failed to identify, let alone remedy. By 1982, she was complaining to all who would listen that 'there is far too much to do to keep my head above water. I find it increasingly difficult to keep track of everything, especially with the flood of paper, with no secretary.' 'The privilege of Oxford', she added.[196] In fairness, Oxford was not especially unkind to her.[197] Her life at Linacre was a source of pleasure. But the university seemed indifferent to many of its professors, and such indifference she read as opposition. Those few research students whom she supervised speak warmly of her help, 'conscientious (to a fault) and very hard-working in terms of reading drafts, writing copious comments and offering advice'.[198] But she seldom commented on Oxford intellectual debates, and played little role in university administration. Oxford was not her game.

During the mid-1980s, Gowing published several papers, which drew on her earlier research,[199] but expressed concern that her 'life work' would never be finished. A decade had passed since *I&D*, and a sequel was nowhere in sight. Her prospects were not improved between 1980–6 by a flutter with a history of solid state physics that did not materialise, and by several time-consuming visits to Geneva in preparation for a history of CERN, in which she soon lost interest.[200] Her chapter on 'Nuclear weapons and the special

[196] Institute of Mechanical Engineers, Hinton Papers, A 123, Gowing to Hinton, 13 July 1982; 'I have no secretary (and) my filing is unreliable,' she reminded him. Hinton Papers B 96, Gowing to Hinton, 17 Jan. 1983.

[197] Gowing's experience was not unique. Robert O'Neill, Chichele Professor of the History of War, and Fellow of All Souls, met similar frustrations. As Professor O'Neill recalls, 'I did supervise some graduate students and a couple of visiting fellows in the nuclear weapons field, but that was as far as Oxford allowed the subject into the doorway … I ran graduate classes and lectured every week, but I could get no teaching assistance and no secretary. So it was a "DIY" university as far as I was concerned.' Pers. comm., Robert O'Neill to author, 22 Nov. 2009.

[198] Pers. comm., Dr Peter Morris to author, 31 May 2006.

[199] Margaret Gowing, 'How Britain produced the bomb: Margaret Gowing on Anglo-American relations and the nuclear deterrent', *The Guardian*, 8 April 1985, 9; 'Niels Bohr and nuclear weapons', in A. P. French and P. J. Kennedy (eds.), *Niels Bohr: A Centenary Volume* (Cambridge, MA, 1985), pp. 266–77; 'Les Savants Nucléaires dans la Tourmente', *Echos du Groupe CEA*, No. 1 (1984), 12–15, trans. Bertrand Goldschmidt, 'En Gammel og intim Forbindelse', in *Naturens Verden*, 11 (1984), IX–XVI, in *Om Videnskab og politik, tre essays med udgangspunkt I Niels Bohrs overvejelser* (Rhodos), pp. ix–xvi; 'Sir Nevill Mott: an appreciation', *Philosophical Magazine* B, 52 (1985), 215–16.

[200] The project teetered on the edge of tears until it was rescued by Dr (now Professor) John Krige, an outstanding historian of science and technology, previously a member of the pioneering History and Social Studies of Science Subject Group at Sussex University. He and his team produced

relationship' in a collection edited by Roger Louis and Hedley Bull marks the end point of a journey that, in happier circumstances, might have had a different outcome.[201]

As the years went by, Gowing increasingly left Arnold to 'her own salvation'.[202] In Gowing's absence, the Authority Historians Office produced what Arnold called 'a modest flow of papers, articles and lectures', and furnished information to industry and academics in Britain and overseas.[203] But no real progress was made on a 'third volume'. Research assistants were hired to write up sections that might one day be folded into a master narrative.[204] John Hendry, one of these assistants, remembers Gowing as being 'quite impossible to work with'; 'the only way to get anything done was to work around her. During the period I worked there (1980–4), she produced nothing but just stormed in occasionally, had a tantrum, and stormed out again.'[205] Given what we now know of her health, her behaviour is perhaps understandable.

Gowing asked Hendry and Arnold to write up a few 'special topics'. For Hendry, this included important work on fusion; for Arnold, on health and safety.[206] Arnold proceeded to write the first published account of the British atomic tests in Australia, the research for which made available for the first time archival information then used by a Royal Commission in Australia.[207] The book made Arnold's name, both in Australia and Britain, whilst buying time against the completion of 'volume three'.

At Gowing's request, Arnold also wrote a chapter on the Windscale accident of 1957, for which she conducted interviews that would have

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John Krige *et al*., *History of CERN*, 3 vols. (Amsterdam, 1987–96). For the work of the Subject Group, see Roy MacLeod, 'Fifty Voices, Fifty Faces: the University of Sussex Oral History Online Exhibition' (Falmer, 2011)—see also <http://www.sussex.ac.uk/fiftyyears/50voices 50faces>.

[201] 'Nuclear weapons and the "Special Relationship"', in Roger Louis and Hedley Bull (eds.), *The Special Relationship: Anglo-American Relations since 1945* (Oxford, 1986), pp. 117–28.

[202] Memo, Arnold to author, Nov. 2004, section 7, p. 7.

[203] Lorna Arnold, 'A letter from Oxford', *Minerva*, 38 (2000), 210.

[204] These included John Hendry, 'Technological Decision Making in its Organizational Context: Nuclear Power Reactor Development in Britain' (University of Cambridge Engineering Department, 1991), and (with J. D. Lawson, FRS), 'Fusion Research in the UK, 1945–1960' (AEA Technology Report, AHO 1, Jan. 1993). A paper by Stephen Keith, 'The Fundamental Nucleus: a Study of the Impact of the British Atomic Energy Project on Basic Research' (AHO 2, May 1993), was prepared for internal use. Other papers that appeared in this series are held at Harwell.

[205] Pers. comm., John Hendry to author, 21 May 2004.

[206] MHS, Gowing Papers, Gowing to Makins, 2 Aug. 1984.

[207] Lorna Arnold, *A Very Special Relationship: British Atomic Weapon Trials in Australia* (London, 1987).

been impossible a decade earlier, or later. The incident came to the fore following the Chernobyl disaster of 1986, which occurred near the date (January 1988) when official files concerning Windscale were to be released by the Public Record Office. Given the prospect of wide media interest, Arnold suggested producing a book. Gowing agreed, and the result was Arnold's *Windscale, 1957: Anatomy of a Nuclear Accident*.[208]

'Not long from now, you will be free from the distractions of your chair,' Hancock wrote to Gowing, in December 1984, 'no need for you to worry. You will bring to a triumphant conclusion your magisterial history of the Atomic Energy Authority.'[209] The long promised moment of retirement came finally in 1986, when Gowing turned 65, two years before the official (and customary) retirement age at Oxford. The event was marked by collegial courtesy and civility. Lincacre College made Gowing an Emeritus Fellow, and Nicolaas Rupke edited a fine Festschrift—which, appropriately, included a Preface by Alan Bullock.[210] More surprising—to her colleagues, and to Gowing herself—came the news of her election to the Fellowship of the Royal Society, under the provisions of Clause 12 of its Charter, which permits the election of non-scientists who have made distinguished contributions to science.[211] This honour elevated Gowing into the ranks of a select few—at the time, only two others (Joseph Needham and Karl Popper)—who were Fellows both of the British Academy and of the Royal Society. Jon Turney in the *Times Higher Education Supplement* (*THES*) acclaimed Gowing as one who 'has done more than anyone to establish the importance of science in social, political and economic inquiry'.[212] She was fond of saying to friends that, at one time, she had been undervalued; now, she was overvalued. Genuine modesty masked deep delight.

Gowing was not sad to leave her chair. Oxford University held no high place in her affections: 'Inevitably,' she wrote to Trevor-Roper, 'I am conscious of my failures here rather than my successes.' Among the latter, she counted her continuing support of the Wellcome Unit, which had thrived

[208] Lorna Arnold, *Windscale, 1957: Anatomy of a Nuclear Accident* (London, 1992; 2nd edn., 1995).

[209] MHS, Gowing Papers, Hancock File, Hancock to Gowing, 8 Dec. 1984.

[210] Nicolaas Rupke, *Science, Politics and the Public Good: Essays in Honour of Margaret Gowing* (London, 1986).

[211] Hancock, prescient as ever, foresaw this possibility in Jan. 1985. MHS, Hancock File, Hancock to Gowing, 23 Jan. 1985. Hancock said (8 Oct. 1985) that he was asking Oliphant to mobilise others to propose her.

[212] Jon Turney, 'Chronicler of Big Science at the Heart of the State', *Times Higher Education Supplement*, 22 July 1988, 6.

under the direction of Charles Webster.[213] Her most conspicuous legacy to the university was CSAC which, on her retirement in 1986, and Mrs Alton's in 1987, Oxford proposed to close. The Centre had processed some 110 collections, and had won international acclaim. But this had come at a cost. To Michael Hoskin of Cambridge, Gowing confessed that 'over the 11 years of the Centre's life, money has been a constant nightmare'. The Royal Society was meeting 50 per cent of its budget (£32,000 in current pounds), but the other half required hard canvassing. Gowing did 'not envy any other body which might take over the job of raising money on this hand-to-mouth basis', and expressed 'great exasperation' with the Royal Society for declining to take it over completely.[214]

Under the circumstances, Gowing was obliged to let other universities 'bid' for CSAC. In the end, the only offer forthcoming came from the University of Bath, where Rodney Quayle, FRS, then on the Royal Society's Council, was Vice-Chancellor. With Royal Society support, CSAC continued at Bath from the Spring of 1987, rebranded as the National Cataloguing Unit for the Archives of Contemporary Scientists. Many collections were processed, and several more were underway, under the direction of Dr Peter Harper, and with the continuing assistance of Mrs Alton, when in December 2009 the Royal Society withdrew its funding. The University of Bath declared itself unable to continue its support.[215]

Fortunately, Gowing did not live to see the demise of her beloved Centre. For a time, the history of science at Oxford also remained in a parlous state. The university lectureship that Crombie held disappeared with his retirement in 1983, and Gowing had been unable or unwilling to seek funds to replace him. The Museum of the History of Science slumbered under erudite but unenterprising management, and undergraduate numbers in the history of science remained small. In 1986–7, only about twelve History undergraduates, in each of the first two years, took one of the two History options on the Scientific Revolution and on Intellect and Culture in Victorian Britain. In science, some ten to twenty undergraduates took a Supplementary Subject or did a Part III thesis in the history of

[213] This is perhaps not an appropriate place to discuss the vexed history of the Wellcome Trust and the Wellcome Unit in their complex and sometimes bitter relations with the Faculty of Modern History. This history is abundantly surveyed in the Minutes of the Faculty Board.

[214] Bodleian Library, Special Collections, Gowing Papers, Gowing to Sir William Paton, 15 July 1985; Gowing to Dr Michael Hoskin, 2 Aug. 1984; Hoskin to Gowing, 4 Aug. 1984.

[215] Pers. comm., Professor Angus Buchanan to author, 17 March 2011. There are proposals to continue its work, possibly at Imperial College or the Science Museum. I am grateful for information and assistance from Dr Peter Harper and Dr Timothy Powell.

chemistry, and a few undergraduates from other Schools, reading for other degrees, attended lectures. In the undergraduate courses, Gowing's participation had receded, and none of the seventeen research students working in different areas of the history of science were hers. Her passionate plea for the integration of science and history—the key theme of her Inaugural Lecture in 1975—had been forgotten. The vacant chair went onto Oxford's Register of Suspended Posts. With the freezing of academic appointments in 1986, some feared the chair might disappear. [216]

At the time, it was common knowledge that Gowing had retired to write the celebrated 'third volume',[217] a Homeric task that had achieved almost mythic status. But what had been a near certainty at the project's dawn, and even feasible at midday, appeared at twilight quite out of reach. Even a 'synoptic' volume, of the kind that Gowing had written with Hancock during the war, was too awesome to contemplate.

Following Gowing's retirement, the UKAEA closed the historian's London office, and the AHO at Harwell was run down. Had there been an Advisory Committee, its decline might have been arrested, and its work continued. But there was none. As it was, work was delegated principally to Lorna Arnold. Not surprisingly, Gowing grew envious of her extremely able, loyal, and dedicated colleague, whom age had (and has) never wearied.[218] Over the next two years, Arnold produced a fine history of Britain's H-bomb, recounting events between July 1954 and the Christmas Island tests in September 1958. This for the first time made public the work of William (later Lord) Penney and the 'weaponeers' of the Atomic Weapons Research Establishment (AWRE), Aldermaston, in designing, fabricating and testing Britain's first thermonuclear weapon.[219] Along with other political factors, this demonstration of technological capability had won for Britain the 'great prize' of restored cooperation with the United

[216] In 1986, given the freeze on appointments, only two of the thirteen posts on the Register were filled (the chair in the History of War, vacant for four years by 1986, and a CUF lectureship). Bodleian Library, Special Collections, Gowing Papers, Gowing to Paton, 15 July 1985. Dacre Papers, Gowing to Trevor-Roper, 28 July 1986. Observers suggest that the timely intervention of Professor Mary Hesse of Cambridge, who led a UGC review of the history of science in Britain, helped rescue the Oxford chair for the discipline, and for the nation. In 1988, Charles Webster considered applying for the chair, but instead accepted a Senior Research Fellowship at All Souls. The same year, Robert Fox was appointed to the chair. Fox retired in 2006, and his successor was appointed in 2007. At this writing, there is no lectureship, but undergraduate numbers are up, research student numbers are stable, and the Museum of the History of Science, under the direction of Dr Jim Bennett (formerly of Cambridge) is an outstanding success.

[217] See, for example, Dacre Papers, Gowing to Trevor-Roper, 28 July 1986.

[218] I owe this observation to Nik Gowing.

[219] Lorna Arnold, *Britain and the H-Bomb* (London, 2001).

States—the goal of nuclear diplomacy on which Gowing had put such great store, and on the absence of which she had so passionately written.

In all she then wrote, and in all she has since written, Lorna Arnold proved Gowing's worthy successor. Arnold's 'H-Bomb' marked the last formal production of the UKAEA History Office.[220] Since the UKAEA was closed in the 1990s,[221] nuclear history in Britain has become 'fragmented and there is no government body with an overall responsibility for nuclear matters'.[222] The Authority's recent past has involved extensive privatisation—of which Gowing would have certainly disapproved[223]—and there appears to be no interest at the Cabinet Office in sponsoring a history of the last half-century of Britain's affair with the atom.[224]

With hindsight, the publication of *Indy* in 1974 marked the UKAEA history's high water mark. But those volumes were limited to the period 1945–52. The next period, 1952–8, was dealt with in a few *ad hoc* publications, of which Arnold's were memorable; but for the decades since 1958 'there was (and is) nothing'.[225] As of this writing, the absence of a 'third volume' leaves a major gap. There remains today no official study of the deliberations surrounding US/UK nuclear collaboration after the UK/USA agreement of 1958; no official study of Britain's civil nuclear power policy, nor of the many organisational changes that have transformed Britain's nuclear enterprise since 1953.[226] Nor, indeed, has there been a definitive history of Britain's role in respect to reactor safeguards and radiological protection.

[220] See Arnold, 'A Letter from Oxford', p. 203.

[221] In the Thatcherite 1980s, the AEA was required to become a commercial enterprise, and during the 1990s many of its activities were transferred to a public company, AEA Technology. By the early 2000s, the Authority was reduced to a residual body, charged with managing and restoring former nuclear sites, decommissioning, and policing nuclear materials.

[222] Arnold, 'A Letter from Oxford', p. 213.

[223] In April 2008, a new subsidiary, UKAEA Ltd, was created to oversee decommissioning and environmental restoration. In February 2009, a wholly owned subsidiary of the Authority was formed to operate the sites at Harwell and Winfrith. Research Sites Restoration Limited (RSRL) continues work for Harwell and Winfrith on behalf of the Nuclear Decommissioning Authority (NDA). In Oct. 2009, UKAEA Ltd. and its subsidiaries were acquired by Babcock International Group PLC.

[224] The only 'official' historian now in post is Ms Kathryn Pyne, the technical historian of Aldermaston, who assisted Lorna Arnold in the preparation of her book on the H-bomb. I am grateful to Ms Pyne for an introduction to Aldermaston and its work.

[225] Arnold, 'A letter from Oxford', p. 213.

[226] In 1971 the Authority was partitioned. Research activities remained with the Authority, a Radiochemical Centre was assigned the production of radioisotopes, and British Nuclear Fuels, Ltd took over weapons production facilities at Springfields, Capenhurst, Windscale, Calder Hall and Chapelcross. In 1973, the weapons sites were transferred to the Ministry of Defence.

We may take it as given that, in Lorna Arnold's words, Britain's official nuclear history project is now 'dead beyond hope of resurrection'. But if nothing of the original plan survives, it is surely appropriate to foster in other ways the work that Gowing and Arnold memorably began. Given the continuing role of nuclear technology in Britain's civil and military policy, it remains essential that we know the routes by which science, technology, industry and government have brought us to the present we know, and to a future we will all have to deal with.

The final curtain

From the early 1980s, family and colleagues noticed signs of Gowing's illness. Symptoms of failing memory and chronic tiredness were at times compounded by a troublesome back, which required her to wear a metal corselet. After retirement in 1986, she began to suffer what she called a 'virus', variously described as a myalgic encephalomyeltitis, or as 'post-viral fatigue disease'.[227] These diagnoses may have masked her real condition. Some recall that, when she was elected a Fellow of the Royal Society in 1988, she had difficulty in taking in the news.[228] Others recall having to help her find her way in the street. Her mental condition was all the more distressing for not being properly understood, and was never correctly diagnosed. She is now thought to have suffered from multi-infarct dementia, and from what are by now the all-too familiar features of Alzheimer's disease.

During the late 1980s, Gowing remained a visible presence at academic gatherings. Although she could not do new research, publications from her pen continued to appear.[229] Some of these repeated earlier work, but

[227] MHS, Gowing Papers, Perrier Box, Gowing to Martin Rudwick, 29 Feb. 1988; Dacre Papers Gowing to Trevor-Roper, 2 Sept. 1988.

[228] Pers. comm., Dr Peter Morris to author, 31 May 2006.

[229] 'How Nuclear Power Began', *Second CEGB Lecture* (Southampton: University of Southampton, 1987); 'Britain's postwar industrial decline: commentary on Corelli Barnett, *The Audit of War*', *Contemporary Record*, 1 (2) (1987), 18; 'Britain and the bomb: the origin of Britain's determination to be a nuclear power', *Contemporary Record*, 2 (2) (1988), 36–40; 'The Civil Histories of the Second World War', Lecture, 1988; 'The origins of Britain's status as a nuclear power', *Oxford Project for Peace Studies*, OPPS Paper 11, 1988; 'Prologue: early Western nuclear relationships', Center for International Security Studies, Nuclear History Program, Occasional Paper 4 (Bethesda, MD, 1989); 'The origins of Britain's status as a nuclear power', in John Baylis and Alan Macmillan (eds.), *The Foundations of British Nuclear Strategy, 1945–1960*, International Politics Research Papers No. 12, Department of International Politics, University College of Wales (Aberystwyth, 1992), pp. 7–19.

her memoirs of Bohr, Hinton, and Chadwick were and remain fundamentally important contributions to the literature.[230] In 1992, she retired from the Trusteeship of the National Portrait Gallery, and in the next few years her social life wound down. Recalling her post-war struggles with the Treasury, her last years were troubled by struggles with the pension service. Although she had worked in the civil service and academic life for forty-five years, she was reckoned to have only twenty-seven pensionable years, so was not eligible for a full pension. Her son Nik and his family were called upon to support her.[231]

In the early 1990s, Gowing moved from Northmoor Road to Ritchie Court, a block of purpose-built flats on Banbury Road, and then to a nursing home. With both cunning and foresight she had identified these flats some years earlier, fearing a deterioration in her health, which she seemed to comprehend but also hoped to hide for as long as possible. In February 1994, after a lumbar puncture, her general health began to fail. With her mental condition worsening, Nik and James moved her to even more sheltered care in a home in London, much closer to them. As the inexorable but little understood process of dementia consumed her, she was admitted to Putney Hospital, then to Kingston Hospital.[232] The end came, after the onset of pneumonia, on 7 November 1998.

Gowing willed her brain to the Oxford Project into Memory and Ageing (OPTIMA) at the John Radcliffe Hospital. With her passing, tributes flowed in abundance.[233] A memorial service was held at the University Church of St Mary the Virgin, Oxford, at which Alan Bullock spoke. Margaret had led a distinguished life, of memorable service to her country and her calling. During her lifetime, she entered the history she had herself

[230] Margaret Gowing, 'Niels Bohr and nuclear weapons', in J. de Boer, E. Dal and O. Ulfbeck (eds.), *The Lesson of Quantum Theory* (Amsterdam, 1986), pp. 343–54; 'Niels Bohr and nuclear weapons', Discourse, *Proceedings of the Royal Institution*, 59 (1987), 47–56; 'Lord Hinton of Bankside (12 May 1901–22 June 1983)', *Biographical Memoirs of Fellows of the Royal Society*, 36 (1990), 219–39; repr. as 'The life and times of Lord Hinton of Bankside', *Atom* (June 1991), 20–4 and (July/Aug. 1991), 21–6; 'James Chadwick and the atomic bomb', *Notes and Records of the Royal Society*, 47 (1) (1993), 79–92.

[231] MHS, Hancock File, covering memo; pers. comm., Nik Gowing to author.

[232] Nik Gowing to author, 20 May 2012.

[233] Obituaries include (in chronological order): Richard Norton-Taylor, 'Exploding the myth of the bomb: Professor Margaret Gowing', *The Guardian*, 9 Nov. 1998, 15; [Lorna Arnold], 'Professor Margaret Gowing', *The Times*, 11 Nov. 1998, 23; Charles Webster, 'Margaret Gowing', *Daily Telegraph*, 12 Nov. 1998; Robert Fox, 'Professor Margaret Gowing', *The Independent*, 20 Nov. 1998, 6; Anon, 'Professor Margaret Gowing: Oxford's first Professor of History of Science who turned official files into lively reading', *Daily Telegraph*, 23 Nov. 1998; Richard Hewlett, 'Margaret Gowing (26 April 1921–4 November 1998)', *Isis*, 90 (1999), 326–8; Charles Webster, 'Margaret Gowing, 1921–98', *History Workshop Journal*, No. 47 (1999), 327–30.

written; at her death, she became part of the national record that she had helped to preserve.[234]

Remains of the day

A memoir seeks to be objective and even-handed, and this memoir is unlikely to be the last word said about Margaret Gowing. Rather, this should be viewed as an invitation to study in greater detail the life and times of a woman of intelligence, ability and drive who left a memorable body of work. This essay offers no more than tentative suggestions, upon which a later biographer may wish to build.

Given existing evidence, it is hard to resist the conclusion that Gowing's life embodied a fortuitous combination of intelligence, good luck, timely chance, careful tutelage, opportunity, integrity and hard work that, in the circumstances of post-war Britain, enabled her to rise from unpromising social, economic and educational origins to reach the summits of English academic life. Of all the opportunities presented to her, she made the most. Her contributions to official history are regarded as monumental. Amongst her staff, she was said to be 'difficult', and Sir Crispin Tickell spoke of her 'spikey side'; yet, she was cherished by many historians who knew her. As Lawrence (now Sir Lawrence) Freedman wrote to her son, 'knowing that Margaret Gowing took you seriously was a boost to anyone's confidence'.[235]

Domestically, Gowing found herself in an unhappy marriage, but took great pleasure in her children, friends, and extended family. For her generation of women academics in Britain, she became a portrait in how to square the eternal circle of family, life, and work. She lived for her subject, and for her children. Her early social and economic background left its mark. As Lorna Arnold, perhaps her closest colleague recalls:

> Of non-professional and non-academic interests, she had few. She was not much interested in music, or opera, or the theatre, and so far as I ever discovered, did not reach much outside her own subjects of economic and nuclear history. She wasn't interested in sport. In fact I think all her interest was really focused on her two sons, Nicholas and James, to whom she was devoted, and on her career and professional work.[236]

[234] Robert Fox, 'Margaret Gowing, 1921–1998', *Oxford Dictionary of National Biography* (Oxford, 2004), vol. 23, 147–9. <http://www.oxforddnb.com/view/article/71257>.
[235] Gowing Family Papers, Freedman to Nik Gowing, 27 Nov. 1998.
[236] Memorandum, Arnold to the author, Nov. 2004, section 9, p. 7.

She was not without contradictions. She enjoyed the hallmarks of the Labour left, of men with northern accents and working class sympathies, but she could be autocratic towards her staff. Social climbing runs as a subtext throughout her career. She never seemed to overcome an early, deep-seated lack of self-confidence, which the receipt of academic awards and national honours failed to remedy. With her staff, or with those she felt not quite in her league, she could appear ungenerous. With some students, Gowing could also appear cold; yet, in her assessment of those she valued, she was full of praise. Most of her few students went on to professional success, and attest to her kindness and readiness to help.

Extremely sensitive to criticism—intended or otherwise—she was quirky, ingenuous, abrupt, and awkward with others. Reading her correspondence, one finds she could be oblivious to the implications of gossip, or what effect her words might have on others. 'Outsiders' to Oxford relished her readiness to say what she thought, without regard for the consequences. But this had a downside. Whilst she greatly admired people she approved of, she was sharp in dismissing those whom she did not. Difficult to please, both personally and in print, she could find credit difficult to share. She was selective in her praise, and could be accused of playing favourites. The obligation to recommend all too easily becomes an opportunity to reward or punish. Her worst invective she reserved for those whom she considered morally or academically weak. Her letters are peppered with the vocabulary of the censor, with an implicit arrogance—works she disliked were deemed 'worthless' or, scarcely less terrifying, 'disreputable'. As often with those espousing high principles, her broadsides could backfire. She could rebuke what she called 'dealers in sneers', yet in private correspondence sail perilously close to using their own language.[237]

In a familiar, self-deprecating phrase, one that wearied with repetition, Gowing seems to have rejoiced in the admission, once appointed, that she had never studied science. In an interview with the *THES*, seventeen years after she took the chair at Oxford, she admitted it was 'completely improbable that she should move into the history of science'.[238] But to rise to the challenge is what the work demanded, and once her drafts had been read—and corrected, if necessary, by the brightest scientists in the land—her ignorance of science did her no lasting damage. Indeed, faced with large, usually masculine egos, in what were, in her day, the most masculine

[237] Dacre Papers, Gowing to Hugh Trevor-Roper, 20 Dec. 1983.
[238] Turney, 'Chronicler of Big Science', p. 6.

fields of science and engineering, the *de facto* necessity of cultivating a stereotype of female innocence, if not ignorance, could work powerfully to her advantage. Knowing little of the technicalities, she showed herself willing to learn from those who gave her time. Her account of events in turn helped reflect their considered views. As caricatures of Margaret Thatcher beckon, it could be that women more powerful than Gowing have played the same game with similar success.

For Gowing, academic life at Kent and Oxford was a disappointing experience. However much she may have been viewed as the 'scientists' candidate' (and advocate), Gowing never strayed far from her wartime interests in archives, government, politics and contemporary history. University life had its compensations, but also its limitations; one had to teach, which she disliked; and to help students who might not share her passion. At Oxford, she was handicapped in having little formal knowledge of the subject she was meant to profess; and was unfairly (if somehow, properly) called upon to pontificate upon subjects, people, and periods she hardly knew. For all her networking, she knew little of academia, and those features she did, she generally deplored. She had several research students assigned to her, but having no research degree herself, she could be insecure and overbearing in their supervision. On the other hand, she did not weigh her position lightly, nor had she any sense of entitlement. A more modest, meritocratic Oxford professor would be hard to find, and her students remember her with affection.

It was a tragedy that Gowing did not have an opportunity—whether in her academic appointments, or in her writing—to build upon her training in economic history, and to contribute to economic policy, rather than to be repeatedly, relentlessly pilloried for her admitted ignorance of the sciences and their history. Nonetheless, the opportunities to engage with economic historians and historians of technology were many—both at Oxford, and elsewhere in Britain. It remains surprising that she chose to stand so far apart from their traditions and debates.

As an official historian, Gowing's style and methods reflected her years of apprenticeship with Keith Hancock, a master of the craft. Edward Bridges once told Hancock that he must begin his research at the highest level—and not to write of one department only, nor of one project or personality, but instead to develop key subjects, and pursue them.[239] From her twenties, Gowing took these lessons to heart—formal but fair, reject-

[239] Hancock, *Country and Calling*, p. 198.

ing secrecy and conspiracy, and cultivating close contact with men (*sic*) who made the key decisions. She enjoyed the company, and earned the confidence, of the influential and powerful, to which her wartime experience of the Cabinet Office and its grandees greatly contributed. Learning from Hancock to work 'from the top' was not only how to practise a trade, but how to tell a story. Her work embodied a central perspective more characteristic perhaps of Whitehall than Westminster, a focus on tactics, details, avoiding contention, and letting commentary speak for itself. Policy and politics as viewed from the centre, informed by disinterested elites, form the perspective for which she is remembered.

In an age before the dominance of computers, Gowing's methods of research and writing reveal a masterful approach to the collecting, cataloguing, and use of public records. Lorna Arnold recalls once remarking to Gowing on the disorderly appearance of her desk, only to be told that she did not need a system, or to be neat, because she had such a good memory. Certainly, Gowing had a powerful mind, capable of cutting through masses of documentation to see the big picture. To this, she added a direct, forceful, straightforward if inelegant style. This brought enormous advantages. If she were never difficult to read, it was difficult for her readers (and departmental vetting officers) to disagree with what she wrote.

Gowing's appointment to the UKAEA—surely, one of the most patient and tolerant government departments in Britain ever to commission a history—was both timely and promising. The perspective of official historian required knowledge both of the machinery of government, and of the people who made policy. Gowing was fortunate in that Britain's nuclear history—the story of building a Bomb, and a Super Bomb, and developing civilian nuclear power—had engaged some of the best minds in the country, and their records had been carefully kept. If the Authority had decided not to accept the rule of the Public Records Act, its archives would have remained under the Official Secrets Act; and even those released to the public, and eventually reaching the PRO, would have been thin, and greatly delayed—indeed, either until the 1970s (under the Thirty Year Rule) or the 1990s (under the Fifty Year Rule). This would have delayed historical analysis for at least a generation, long after the death of many of the key actors, whose memoirs could not be relied upon in the same way.

To her task, Gowing brought ability and energy, and opened the subject of nuclear history for others. In the words of Lorna Arnold, her legacy

forms 'an incalculably important piece of British history'.[240] She was fortunate, as her account of British nuclear policy between 1945–52 has never been superseded, nor seriously questioned. It was once said of her friend Hugh Trevor-Roper that his writing showed more brilliance than depth. In Gowing, these features are reversed. Her writing is deep, rather than brilliant; her measured prose unfolds a narrative that brooks no distraction. Thanks to the rules of official history, it is also unhindered by the presence of qualifying footnotes, or intellectual crossfire. Tangential discussion or debate are not the stuff of policy.

But if this must be the way with official history, it is not the way with fast moving, nuanced fields of scholarship, such as the history of science and technology. Gowing's grasp of the moving research front in the history of science and technology was, at best, unsure. To her credit, she never promised otherwise. She never hid her respect for high scholarship, and encouraged those who looked to her for guidance and supervision. And given a life of state papers and prose, she had little time for changing scholarly fashions. Her letters and papers reveal remarkably little interest in historical events or ideas before the twentieth century, or outside her own compass, or even in the mainstream of current economic and social history, as then taught at Kent, Oxford, or elsewhere. She reveals even less interest in American history, or European let alone Asian history, and whilst enjoying the company of émigrés in England and holidays in France, sensed no professional need to follow nuclear developments over the Channel or across the Atlantic.

In assessing Gowing's legacy, our conclusions must remain tentative. Gowing's reputation rests principally on her two books and a large number of articles and book chapters, many of which are repetitive. This corpus contributed significantly to the emerging fields of nuclear history, nuclear politics, and strategic studies, which in the 1980s were carried forward by scholars such as Andrew Pierre, Peter Malone, and John Simpson.[241] In ways that all historians admire, Gowing was cited by them, and is still cited today. However, it is indeed disappointing that her account ended in 1952, with the publication of her second volume(s) in 1974. The next thirty years of the Cold War were to prove transformative for Britain's defence policy, its nuclear deterrent and force posture, and its relationship with the United States, and, in many ways, that story remains to be writ-

[240] Memo, Lorna Arnold to author, Nov. 2004.
[241] Andrew Pierre, *Nuclear Politics* (Oxford, 1982); Peter Malone, *The British Nuclear Deterrent* (London, 1984) and John Simpson, *The Independent Nuclear State* (London, 1983).

ten. However, Gowing is hardly alone among historians in leaving books unfinished;[242] and in any case, a comprehensive 'third volume' along the lines that she and Arnold contemplated between 1972 and 1985 may have proved in the end impossible to produce. Even by the 1970s, the quantity of official documentation had grown too large, too varied, too complex; and future official histories—if there were to be such—would be obliged to divide the subject into periods, problems, places, and personalities. The result could be more thorough, but possibly less comprehensive. Such was the approach that Lorna Arnold decided to take with her studies of Windscale, the British Tests in Australia, and the British H-Bomb. It remains unclear why Gowing did not attempt to do the same, writing on specific topics of her own choosing—unless, of course, her illness provides the simplest explanation.

Given the conventions of official history, Gowing's writing is a model of probity and integrity. At times, her sense of civic duty seems to restrict the public expression of views she must have deeply held. By upbringing and choice, Gowing was left-wing. Yet, her writing takes a vow of neutrality, or at least follows a style that relies upon narrative to speak for itself. It is well known that she, like Hancock, distrusted the unequal terms of engagement that defined the 'Special Relationship' with the United States, and her respect for liberal democracy was at times compromised by the conduct of British nuclear decision-making. Her message in *Independence and Deterrence*—and after—was that, by the decisions of a few, taken without consultation with the people, Britain had made itself hostage to a fortune that, for a time, seemed to favour membership in a nuclear club, that cost a great deal and guaranteed little. Regrettably for Britain, the price of admission was such that the country gained neither 'independence' nor a real deterrent. This was a conclusion Gowing did not wish, nor wished to see, but it was an outcome that few could deny. The missing 'third volume', with its apparent emphasis on 'interdependence', could perhaps have set the story straight, or at least have given it greater balance.

In the decades immediately before and after her early retirement, Gowing's health made serious new work difficult, if not impossible. As her illness became more widely known, her physical limitations, and her loss of memory, were accepted as a condition for which she bore no blame. The famous 'third volume' would no doubt have ensured her a more prestigious place in the pantheon. But a younger generation of scholars, having access to public records she fought hard to make available, has overtaken

[242] Trevor-Roper left at least five, possibly more. Worden, 'Hugh Redwald Trevor-Roper', p. 267.

her, and new questions are being put. The Cabinet Office Historical Series continues, if at a glacial pace that may prove too slow for the internet. Perhaps the high tide of official history, as Hancock knew it, has passed. But if so, the issues that Gowing took up have not lost their salience. Sixty years ago, in *British War Economy*, she and Hancock recalled Britain's struggle to overcome the consequences of policies that heavily burdened the nation, and poorly distributed its resources.[243] Gowing did not live to see the end of that struggle. Possibly, neither have we.

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[243] Gowing and Hancock, *British War Economy*, p. 555.

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