

RESEARCH ARTICLE

‘Armed with the necessary background of knowledge’: embedding science scrutiny mechanisms in the UK Parliament

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Abstract

The unprecedented circumstances of the COVID-19 pandemic have intensified the demands placed upon parliamentarians to scrutinize and evaluate evidence-based government proposals, making visible the parliamentary mechanisms that enable them to do so. This paper examines the steps that led two such mechanisms to become embedded in the institution of Parliament during from 1964 to 2001: the House of Commons Select Committee on Science and Technology (a scrutiny and information-gathering body) and the Parliamentary Office of Science and Technology (a legislative science and technology advice body). Drawing on official papers, Hansard records and unpublished archival material, this account complements existing studies of the relationships between government ministers and experts. It highlights how individual members of the all-party Parliamentary and Scientific Committee have influenced institutional change. In so doing it exposes some of the challenges confronting Parliament in the scrutiny of science policy from the mid-twentieth century to today. In particular, it reveals MPs’ concerns about their ability to scrutinize science policy in the absence of a select committee on science and technology in the Commons during the 1980s. This shows that parliamentary scrutiny of science was compromised during the very period when the Conservative government under Margaret Thatcher set about making major changes to the organization and funding of government-sponsored research in the UK.

Governments and legislatures are increasingly faced with the task of responding to evidence-based recommendations and producing evidence-based policy. Members of the UK Parliament (elected representatives in the House of Commons and life peers appointed to the House of Lords) have long recognized a need for access to reliable information in order to fulfil their scrutiny and legislative functions. This was articulated in a recommendation in a 1965 report from the House of Commons Select Committee on Procedure: ‘More information should be made available to Members of the way government departments carry out their responsibilities, so that, when taking part in major debates on controversial issues, they may be armed with the necessary background of knowledge.’¹ The onset of the coronavirus pandemic in March 2020 highlighted the procedures through which scientific research evidence feeds into ministerial decision making, making that requirement for ‘the necessary background of knowledge’ acutely

¹ HC Select Committee on Procedure, *Fourth Report 1964–65* (29 July 1965), p. v.

relevant to today's parliamentarians. This article looks specifically at how elected members of parliament (MPs) are equipped to draw on expert knowledge when scrutinizing the use of science in policy making and holding the government to account.

Much has been written about the use of expert knowledge by government, with Don Leggett and Charlotte Sleigh recognizing 'the important relationship between scientific knowledge and political power'.² The articles included in Roy MacLeod's 1988 edited volume *Government and Expertise* show that in Britain during the nineteenth century, experts and specialists increasingly gained positions of authority within government departments, from where they exerted influence over the policy-making process.³ The growing size and expectations of the scientific community in the nineteenth century led to an expansion in the state's need to engage with and patronize the interlocking institutions and individuals of science, as MacLeod demonstrates in his study of science and the Treasury from 1870 to 1885.⁴ Scientists who worked hard to increase their influence in political circles during the 1880–1919 period have been assigned the enduring label 'public scientists' by Frank Turner – people who attempt 'to persuade the public or influential sectors thereof that science ... is worthy of receiving public attention, encouragement, and financing'.⁵

The title of a conference organized in 1916 by the British Science Guild – The Neglect of Science – serves to show that members of the scientific community believed the British elite to be indifferent to science and scientists.⁶ The guild was set up in 1905 at a time when Britain felt increasingly vulnerable to her enemies, and was part of a wider movement of social imperialism which aimed to make 'the Empire strong and secure through science and the application of the scientific method'.⁷ As the realities of the First and Second World Wars occupied Britain, so the state became increasingly involved in the formal organization and funding of scientific research to meet the challenges of defending the nation. A volume of edited primary sources published between 1900 and 1970 compiled by J.B. Poole and Kay Andrews, both research staff in the scientific unit in the House of Commons Library, illustrates 'the profound changes in the relations between science and government during the twentieth century', reflecting Parliament's role in overseeing those changes.⁸

However, Parliament's ability to fulfil its duties in this respect was often called into question. A 1919 article in *The Times* noted that 'the relative absence of scientific men from the House of Commons is both a cause and a symptom of the neglect of science in this country'.⁹ In an effort to counter any perceived 'neglect of science' within

² Don Leggett and Charlotte Sleigh, 'Scientific governance: an introduction', in Don Leggett and Charlotte Sleigh (eds.), *Scientific Governance in Britain, 1914–79*, Manchester: Manchester University Press, 2016, pp. 1–24, 4.

³ Roy MacLeod (ed.), *Government and Expertise: Specialists, Administrators and Professionals, 1860–1919*, Cambridge: Cambridge University Press, 1988. See also Sheila Jasanoff, *The Fifth Branch: Science Advisers as Policymakers*, Cambridge, MA: Harvard University Press, 1990; Roger A. Pielke Jr, *The Honest Broker: Making Sense of Science in Policy and Politics*, Cambridge: Cambridge University Press, 2007.

⁴ Roy MacLeod, 'Science and the Treasury: principles, personalities and policies, 1870–1885', in G.L'E. Turner (ed.), *The Patronage of Science in the Nineteenth Century*, Leiden: Noordhoff, 1976, pp. 115–72.

⁵ Frank Turner, 'Public science in Britain, 1880–1919', *Isis* (1980) 71(4), pp. 589–608, 599. See also David Edgerton, *The Rise and Fall of the British Nation: A Twentieth-Century History*, London: Allen Lane, 2018, p. 87; Andrew Hull, 'War of words: the public science of the British scientific community and the origins of the Department of Scientific and Industrial Research, 1914–16', *BJHS* (1999) 32(4), pp. 461–81.

⁶ Roy MacLeod, 'Science for imperial efficiency and social change: reflections on the British Science Guild, 1905–1936', *Public Understanding of Science* (1994) 3, pp. 155–93; Ian Varcoe, 'Scientists, government and organised research in Great Britain 1914–16: the early history of the DSIR', *Minerva* (1970) 8(2), pp. 192–216.

⁷ Richard Gregory, 'Science and the empire', *Nature* (16 December 1922) 110(2772), pp. 797–8, 798, quoted in G. Werskey, *The Visible College*, London: Allen Lane, 1988, p. 35.

⁸ J.B. Poole and Kay Andrews (eds), *The Government of Science in Britain*, London: Weidenfeld and Nicolson, 1972, p. 1.

⁹ 'Science in the new House', *The Times*, 21 January 1919, p. 6.

Parliament, Sir Richard Gregory, editor of *Nature* and chairman of the British Science Guild, mobilized the establishment of a Parliamentary Science Committee in 1933.¹⁰ From this 1933 committee the all-party Parliamentary and Scientific Committee (P&SC) was formed in 1939. It provided a forum which brought together representatives from both Houses of Parliament, learned societies, academia and industry, with the aim of ensuring that parliamentarians were aware of and attentive to the views of scientists.¹¹ Part of the P&SC's activities (which continue along similar lines today) was the organization of a programme of meetings and visits to scientific research establishments which stimulated dialogue among the members. Early P&SC members with specialist knowledge contributed information to a limited 'Parliamentary Information Service' for parliamentarians. Some P&SC parliamentary members also belonged to informal party groups on science and technology, such as the Labour Science Group set up by Richard Crossman in 1963 that comprised MPs, peers and academics.¹²

Interactions such as these between the institutions of Parliament and science were the focus of a number of studies conducted by N.J. Vig and S.A. Walkland during the 1960s, reflecting the Labour government's ambitions to use the 'white heat' of a scientific and technological revolution to transform Britain.¹³ Yet after these were published little attention has since been paid by historians of science or parliamentary scholars to the ongoing interplay between scientific expertise and the House of Commons in the UK Parliament.¹⁴ Occasional studies have emerged on the activities of the House of Lords Select Committee on Science and Technology, but on the whole academic inquiry since the 1970s has tended to focus on the evolution and provision of scientific advice to government in the context of specific policy issues.¹⁵

However, we are seeing a resurgent interest in understanding how scientific expertise is used in the parliamentary sphere, with C. Kenny et al. arguing that more work needs to be done on understanding legislative science advisory structures.¹⁶ This article looks at

¹⁰ N.J. Vig, *Science and Technology in British Politics*, Oxford: Pergamon Press, 1968, p. 26.

¹¹ Hugh Linstead, 'Scientist and politician as partners: the British Parliamentary and Scientific Committee', *Science* (1948) 108(2794), pp. 47–50; Christopher Powell and Arthur Butler, *Parliamentary and Scientific Committee: The First Forty Years 1939–79*, London: Croom Helm, 1980.

¹² Vig, op. cit. (10), p. 89.

¹³ S.A. Walkland, 'Science and Parliament: the origins and influence of the Parliamentary and Scientific Committee I', *Parliamentary Affairs* (1963) 17(3), pp. 308–20; Walkland, 'Science and Parliament: the origins and influence of the Parliamentary and Scientific Committee II', *Parliamentary Affairs* (1964) 17(4), pp. 389–402; Walkland, 'Science and Parliament: the role of the select committees of the House of Commons', *Parliamentary Affairs* (1965) 18(3), pp. 266–78; S.A. Walkland and N.J. Vig, 'Parliament, science and technology', *Technology and Society* (1967) 4(1), pp. 43–5; Vig, op. cit. (10); Harold Wilson, 'Labour's plan for science', speech delivered at Scarborough (1 October 1963); David Edgerton, 'The "White Heat" revisited: the British Government and technology in the 1960s', *Twentieth Century British History* (1996) 7(1), pp. 53–82. See also Roger Williams, 'The Select Committee on Science and Technology: the first round', *Public Administration* (1968) 46(3), pp. 299–313.

¹⁴ The House of Commons Select Committee on Science and Technology looked back at its own history in its *Legacy Report*: HC Select Committee on Science and Technology, *Ninth Report, 2009–2010* (24 March 2010).

¹⁵ P.D.G. Hayter, 'The parliamentary monitoring of science and technology in Britain', *Government and Opposition* (1991) 26(2), pp. 147–66; Roger Williams, 'The House of Lords Select Committee on Science and Technology within British science policy and the nature of science policy advice', in Guy B. Peters and Anthony Barker (eds.), *Advising West European Governments: Inquiries, Expertise and Public Policy*, Edinburgh: Edinburgh University Press, 1993, pp. 137–50; MacLeod, op. cit. (3); Jasanoff, op. cit. (3). Other examples are James Goodchild, 'The evolving role of the Chief Scientific Adviser to the Cabinet, 1940–71', in Leggett and Sleigh, *Scientific Governance in Britain*, op. cit. (2), pp. 63–80; Angela Cassidy, *Vermin, Victims and Disease*, Cham: Springer Nature, 2019.

¹⁶ Caroline Kenny, Carla-Leanne Washbourne, Chris Tyler and Jason J. Blackstock, 'Legislative science advice in Europe', *Palgrave Communications* (10 May 2017), p. 1. See also D. Max Crowley et al., 'Lawmakers' use of scientific evidence can be improved', *Proceedings of the National Academy of Sciences* (2021) 118(9), e2012955118; Caroline

the influence of individual MPs and the executive on the development of two institutional mechanisms key to the representation of science and technology in the House of Commons during the second half of the twentieth century – the Commons Select Committee on Science and Technology and the Parliamentary Office of Science and Technology (POST). In so doing, it broadens our understanding of how the institution of Parliament currently interacts with scientific expertise while highlighting a need for further research into the performance of those mechanisms in enabling Parliament to scrutinize and influence the direction of science-based legislation and policy.

The scrutiny of science in the House of Commons

In the House of Commons, there is no guarantee that any cohort of MPs will possess the necessary knowledge or skills to make informed judgements on the scientific topics that they are asked to consider. In 1975 Arthur Palmer, a Labour MP with a professional background in power engineering, declared that ‘in matters of science and technology, all legislative assemblies are outstandingly amateur’.¹⁷ The 1919 article in *The Times* pointed out that there was only one MP out of 707 ‘whose life has been devoted to scientific research’.¹⁸

This situation is often contrasted to the specialist knowledge embodied the House of Lords through the many distinguished scientists among its membership. As a consequence the House of Lords has developed a reputation for challenging the government on scientific issues, with recent examples including the laying down of amendments to legislation on climate change and holding the government to account on its commitments regarding artificial intelligence.¹⁹

Advocacy organizations acting on behalf of the scientific community have repeatedly argued that the House of Commons needs more MPs with a background in science, technology, engineering, maths and medicine (STEMM), yet there has been limited academic research into MPs with STEMM backgrounds.²⁰ A recent survey of MPs elected in December 2019 estimated that 16 per cent had a STEMM background.²¹ However, studies of twentieth-century MPs group their occupational backgrounds into broad categories such as civil servant, teacher or business manager, so it is difficult to assess exactly how many arrived at Westminster with a STEMM background.²² Those who do possess

Kenny, David Christian Rose, Abbi Hobbs, Chris Tyler and Jason Blackstock, *The Role of Research in the UK Parliament*, 2 vols., London: UK Houses of Parliament, 2017; Anna Hopkins, Sarah Foxen, Kathryn Oliver and Gavin Costigan, *Science Advice in the UK*, Foundation for Science and Technology & Transforming Evidence, 2021, pp. 53–62.

¹⁷ Address to the Institute of Electrical Engineers by Arthur Palmer MP, 10 April 1975, HC/CP/4428, Parliamentary Archives.

¹⁸ ‘Science in the new House’, op. cit. (9).

¹⁹ For example, HL Deb 6 September 2021, c. 611; HL Liaison Committee, *Seventh Report 2019–2021* (18 December 2020).

²⁰ Recent examples include ‘Science in Parliament: should there be more scientists in Parliament?’, *Biologist: Journal of the Institute of Biology* (2013) 60, pp. 10–11; Chi Onwurah, ‘Why are there so few engineers in parliament and public life – and does it really matter?’, speech at University of Leeds, 23 March 2017, at <https://engineering.leeds.ac.uk/events/event/220/chi-onwurah-mp-why-are-there-so-few-engineers-in-parliament-and-public-life---and-does-it-really-matter?> (accessed 26 September 2018); Katja Bego, Jack Pilkington and Charlotte Goujon, ‘Only 9% of GE2017 contenders have a STEM degree: why this is a problem’, at www.nesta.org.uk/blog/only-9-of-ge2017-contenders-have-a-stem-degree-why-this-is-a-problem (accessed 26 September 2018). See also Mark Henderson, *The Geek Manifesto: Why Science Matters*, London: Bantam Press, 2012.

²¹ Campaign for Science and Engineering, ‘MPs to watch’, at www.sciencecampaign.org.uk/engaging-with-politics/science-in-westminster/mps-to-watch.html, (accessed 13 June 2019).

²² P. Norris and J. Lovenduski, *Political Recruitment*, Cambridge: Cambridge University Press, 1995, p. 99; R. Cracknell and C. Barton, ‘Social background of MPs 1979–2017’, House of Commons Library Research Paper 7483 (12 November 2018), p. 13.

such a background are still unlikely to have the expert knowledge required to be conversant with the range of issues that comes before them. An analysis of parliamentary voting during the passage of the Human Fertilisation and Embryology Bill (enacted in 2008) concluded that the data collected did not provide evidence that ‘MPs with a scientific background behaved any differently from MPs without any scientific training on any aspect of the legislation’.²³ An examination of private member’s bills (PMBs) submitted during the 2015–2017 parliament shows that MPs with a STEMM background were ‘no more likely than other MPs to propose at least one PMB related to STEM[M] issues’.²⁴ Similarly, a review of an oral-history collection of interviews with former MPs showed that an interest in STEMM affairs as a parliamentarian was not necessarily connected to having a scientific background before entering the House.²⁵

Since the 1960s, opportunities for MPs to demonstrate engagement with scientific or technical issues have expanded from participation in debates on the Floor of the House and membership of the P&SC to include serving as a member on a relevant select committee or making use of specific scientific research services provided by the Commons Library and POST.²⁶ From 1989 they could serve as a board member for POST, and in 2001 the Royal Society introduced a pairing scheme between MPs and scientists.²⁷ This multiplicity of activities is used by the Campaign for Science and Engineering to estimate the number of MPs with a background or interest in STEMM in recent parliaments:

MPs with a STEMM higher education degree or who have worked in a STEMM career are considered to have a background in STEMM, and MPs who have stated their interest in STEMM, served on the Science and Technology Committee or Board of the Parliamentary Office of Science and Technology, or have been Science Minister or Shadow Minister are counted as having an interest in STEMM.²⁸

It is this definition that gives a clearer picture of how the House considers it has strengthened its credentials when it comes to understanding and scrutinizing the scientific issues that come before it. In his recent study of select committees, Marc Geddes observes that committee membership offers MPs ‘an anchor to deepen their knowledge and understanding of policy-making’, allowing non-scientists to become well informed on specialist subject areas.²⁹ While individual MPs with expertise in the methodologies and findings of STEMM activities contribute to the House’s qualifications in this area, the establishment of permanent institutional mechanisms, including the Commons Select Committee on Science and Technology and POST, were intended to provide MPs of all backgrounds with the opportunity to develop their understanding of scientific issues in order to scrutinize science-based legislation and question government decisions.

²³ Mark Goodwin, ‘Political science? Does scientific training predict UK MPs voting behaviour?’, *Parliamentary Affairs* (2015) 68(2), pp. 371–92, 388.

²⁴ Joshua Myers and Hilde Coffé, ‘The impact of a STEM background on MPs’ legislative behaviour’, *British Politics*, 3 July 2021, <https://link.springer.com/article/10.1057/s41293-021-00188-2>.

²⁵ Emmeline Ledgerwood, ‘MPs on the subject of STEMM: what can oral history tell us?’, *Parliamentary History* (2020) 39(2), pp. 331–49.

²⁶ Parliamentary and Scientific Committee, at www.scienceinparliament.org.uk (accessed 21 April 2020). An all-party parliamentary group (APPG) is an informal, cross-party group with no official status within Parliament. Current membership of the P&SC is approximately 120 parliamentarians and 210 external bodies.

²⁷ The Royal Society, at <https://royalsociety.org/grants-schemes-awards/pairing-scheme> (accessed 21 April 2020).

²⁸ Campaign for Science and Engineering, op. cit. (21).

²⁹ Marc Geddes, *Dramas at Westminster: Select Committees and the Quest for Accountability*, Manchester: Manchester University Press, 2019, p. 38.

In this process, two fundamental mechanisms are at work. The first is the provision of the ‘necessary background of knowledge’, which is achieved with the help of the Commons research services. MPs are supplied with a range of impartial research papers written by researchers in POST (a bicameral office that serves both MPs and peers) and the Commons Library. Library researchers respond to enquiries from individual MPs and their staff, while POST’s work includes horizon-scanning activities, bringing academic research into Parliament through knowledge exchange activities and supporting science advice units in other legislatures.³⁰

The second is the scrutiny function integral to the activities of the Commons Select Committee on Science and Technology. The committee membership consists of eleven backbench MPs who have the power to conduct detailed inquiries across a broad range of government activity to ensure that policy making and decision making are underpinned by robust scientific evidence.³¹ Supported by a team of parliamentary staff and external specialist advisers, the committee publishes reports of its inquiries – based on written submissions and oral evidence sessions – that represent another important source of information for all members of the House.

Looking back

However, as that 1965 recommendation from the Commons Procedure Committee suggests, the ability of MPs to scrutinize government activity was very different in the mid-twentieth century. When it came to science and technology, neither the dedicated select committee nor the specialist research services offered by POST existed as they do today. There are two processes of change that resulted in the creation of these mechanisms within the institution of Parliament. The first begins with the 1960s campaign for a subject select committee which led to the establishment of the House of Commons Select Committee on Science and Technology in 1967 as one element in a wider phase of reform across the Commons select committee system. However, further reorganization of the Commons select committee system in 1979 led to its removal; it was not reinstated as a distinct committee until 1992. The absence of this select committee in the Commons during the 1980s provided fuel to drive the second process, namely increased pressure for a dedicated legislative science advice unit, arguments for which resulted in the establishment of POST in 1989.

This article discusses the different factors that contributed to the establishment of these bodies within Parliament, revealing the influence of individual MPs on the process of institutional reform. It shows that MPs felt that their ability to scrutinize science policy was compromised by the lack of a scrutiny mechanism at a critical period during the 1980s when Conservative governments led by Prime Minister Margaret Thatcher implemented major changes to the systems of government-funded scientific research.³² It also presents the establishment of POST as an example of Thatcher’s commitment to ‘letting the market decide’. These insights contribute to historical studies of UK science policy during the second half of the twentieth century.

³⁰ Parliamentary Office of Science and Technology (POST), *Bridging Research and Policy* (2019).

³¹ Science and Technology Committee webpage, UK Parliament, at www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/role (accessed 25 June 2019).

³² Margaret Thatcher was a trained research chemist who had been employed as an industrial scientist. In analysing how Thatcher’s scientific background influenced her politics, Jon Agar describes her as ‘impervious to claims that science was a special case’. Jon Agar, ‘Thatcher, Scientist’, *Notes and Records of the Royal Society* (2011) 65(3), pp. 215–32, 226. See also Agar, *Science Policy under Thatcher*, London: UCL Press, 2019, pp. 62–121; Rebecca Boden, *Scrutinising Science: The Changing UK Government of Science*, Basingstoke: Palgrave Macmillan, 2004; Peter Collins, *The Royal Society and the Promotion of Science since 1960*, Cambridge: Cambridge University Press, 2015.

The campaign for a specialist select committee

By the 1960s the formulation and debate of science policy were moving up the agenda of the political parties, yet contemporary parliamentary scholars saw ‘little evidence that Parliament is capable of intelligent and sustained consideration of this escalating budget [for scientific research] and its social and political ramifications’.³³ The following statements from MPs during the early 1960s illustrate their concerns and aspirations associated with the House’s ability to scrutinize science when contrasted to the range of expert advice and support on which government ministers could draw in proposing legislation.

I believe that the House is not sufficiently equipped to deal with technical and scientific matters ... There are very few practical scientists in the House. Indeed, there are few hon. Members with any technical qualifications at all. (Sir Lionel Heald, Conservative)³⁴

For the sake of the record, I want to say that the staff in the Library of the House could not on this occasion [a debate on Telecommunication Space Satellite] have been more helpful ... But ... is it right that those who are by definition amateurs in scientific matters should be in the position of having to produce for some of us what is our main source of information? ... It is perhaps justifiable to put in a plea for some sort of scientific secretariat to be attached to the House of Commons – not people who will give us our opinions; we can form our own – but people who will explain the up-to-date information without which we cannot operate sensibly. (Tam Dalyell, Labour)³⁵

I am referring particularly to the absence of any satisfactory debates on scientific questions in the House at present ... technical subjects are absurdly neglected. (Airey Neave, Conservative)³⁶

Do not the scientific, technical and administrative complexities of many of the questions that modern governments are called upon to decide make the general open debate, where Ministers are backed by the vast, expert resources of the civil service and innumerable fact-collecting agencies and individual Members have only their own reading and time-limited research, a contest of David and Goliath? (Arthur Palmer, Labour)³⁷

Calls to address these inadequacies were part of the wider movement for parliamentary reform driven by academics and parliamentary staff, which included Vig and Walkland’s assessment of parliamentary scrutiny of science.³⁸ Many of these reformers joined forces in 1964 to create the Study of Parliament Group, which advocated specialist select committees as a way of addressing institutional deficiencies.³⁹

³³ Walkland and Vig, op. cit. (13), p. 40. See also Edgerton, op. cit. (13), p. 79.

³⁴ HC Deb 15 March 1963, vol. 673, c. 1761.

³⁵ HC Deb 29 March 1963, vol. 674, c. 1735.

³⁶ HC Deb 15 March 1963, vol. 673, c. 1739.

³⁷ Arthur Palmer, ‘The select committee on science and technology’, in Alfred Morris (ed.), *The Growth of Parliamentary Scrutiny by Committee*, Oxford: Pergamon Press, 1970, pp. 15–30, 16.

³⁸ Bernard Crick, *The Reform of Parliament*, London: Weidenfeld and Nicolson, 1964; N.J. Vig and S.A. Walkland, ‘Science policy, science administration and parliamentary reform’, *Parliamentary Affairs* (1966) 19(3), pp. 281–94.

³⁹ The Study of Parliament Group, at <https://studyofparliamentgroup.org/about> (accessed 12 September 2021). Peter Dorey and Victoria Honeyman, ‘Ahead of his time: Richard Crossman and House of Commons reform in the 1960s’, *British Politics* (2010) 5(2), pp. 149–78; Crick, op. cit. (38); Philip J. Aylett, ‘Thirty years of reform: House of Commons select committees, 1960–1990’, unpublished PhD thesis, Queen Mary University of London, 2015.

Campaigning for the establishment of a select committee on science and technology became a key activity for P&SC members. It was one of two goals articulated in June 1964 when the P&SC set up a subcommittee to consider

- (i) If there is need for improved methods by which Members of Parliament can quickly get information from scientists about matters likely to be raised in Parliament.
- (ii) What can be done to improve the existing machinery to ensure that Parliament can establish more effective control over scientific and technological policy.⁴⁰

Within a few months a P&SC report dealing with item ii recommended that a specialist select committee of the House of Commons should be appointed, and this idea became a specific element within the agenda for parliamentary reform. When a House of Commons Select Committee on Procedure was appointed at the end of 1964, the P&SC submitted a written memorandum outlining the case for a specialist committee covering science; the argument was reiterated in another memorandum submitted by the newly formed Study of Parliament Group.⁴¹ In July 1965 the Estimates Committee followed the advice of the Procedure Committee to develop 'in such a way that its Sub-Committees could specialize in various spheres of Governmental activity'.⁴² Six subcommittees were appointed at the end of 1965, including one on technological and scientific affairs which spent the next eighteen months working on an inquiry into space research and development.⁴³

However, this did not satisfy the membership of the P&SC, who continued to press for a Select Committee on Scientific Policy during 1966.⁴⁴ Hope grew when a couple of months later Prime Minister Harold Wilson spoke positively about 'the suggestion of establishing one or two new Parliamentary Committees'.⁴⁵ Crucially, in the summer of 1966 Richard Crossman, an active proponent of parliamentary reform, was appointed Leader of the House of Commons and he championed the proposal for a separate committee on science and technology.⁴⁶ Perhaps his personal interest in science policy, having set up the Labour Science Group, influenced the decision announced in the House at the end of the year to 'establish experimentally, for this Session, two new Committees – one, a subject Committee on Science and Technology; the other, the first Committee to study a Department, the Department of Agriculture'.⁴⁷ In February 1968 another new 'Crossman committee' – the Education and Science Committee – was appointed to monitor the activities of the Department of Education and Science and the Scottish Education Department; overlap on science was kept to a minimum by informal liaison between committee chairmen.⁴⁸

⁴⁰ Powell and Butler, op. cit. (11), p. 37.

⁴¹ HC Select Committee on Procedure, op. cit. (1), pp. 143, 131.

⁴² HC Select Committee on Procedure, op. cit. (1), p. viii; HC Select Committee on Estimates, *First Special Report 1965–66* (8 December 1965), p. 3. The Estimates Committee was one of three financial oversight committees and has been described as having a 'modest' scrutiny role. Aylett, op. cit. (39), p. 13.

⁴³ HC Select Committee on Estimates, *Second Report: The European Space Vehicle Launcher Development Organisations (ELDO) 1966–67* (5 August 1966); HC Select Committee on Estimates, *Thirteenth Report: Space Research and Development 1966–67* (27 July 1967).

⁴⁴ HC Deb 17 February 1966, vol. 724, c. 1544; Walkland, 'Science and Parliament', op. cit. (13), p. 277.

⁴⁵ HC Deb 21 April 1966, vol. 727, c. 76.

⁴⁶ Dorey and Honeyman, op. cit. (39), p. 151.

⁴⁷ HC Deb 14 December 1966, vol. 738, c. 486.

⁴⁸ *Select Committees of the House of Commons 1970*, Cmnd 4507, pp. 3–4; Paul Seaward and Paul Silk, 'The House of Commons', in V. Bogdanor (ed.), *The British Constitution in the Twentieth Century*, Oxford: Oxford University Press,

The first members of the new permanent Select Committee on Science and Technology were appointed on 25 January 1967, and included P&SC members Arthur Palmer, Airey Neave and Tam Dalyell, who had argued for its need on the floor of the House.⁴⁹ The committee soon decided that 'their main object should be to examine national scientific and technological expenditure together with the skills and use of manpower and resources involved, in both the public and the private sectors'.⁵⁰ From 1967 the committee was given the power to appoint 'persons with technical or scientific knowledge for the purpose of particular inquiries, either to supply information which is not readily available or to elucidate matters of complexity within the committee's order of reference'.⁵¹ When the specialist select committee was established, it benefited from a recent expansion of the research division in the Commons Library which provided briefings to MPs. The scientific unit which Dalyell had called for had been established in 1966, with J.B. Poole appointed its head.⁵² The unit worked on building up a scientific index of relevant material and published a fortnightly *Science Digest* of summarized articles from the scientific and technical press, and on issuing background papers.⁵³

By the early 1970s, the committee was confidently exercising its power 'to send for persons'.⁵⁴ One of the most senior government scientists of the day, Sir William Penney, chairman of the UK Atomic Energy Authority (UKAEA) and 'father' of the British atomic bomb, was called as the committee's first witness in 1971, and in the same year, the then Secretary of State for Education and Science, Margaret Thatcher, was requested to give evidence on research policy and funding.⁵⁵ Members of the public were admitted during the examination of witnesses, and the committee held evidence sessions beyond the confines of Westminster, such as at the Royal Aircraft Establishment in Farnborough or the Rolls-Royce site in Derby.⁵⁶

Yet as soon as the 'Crossman committee' was set up, it faced challenges to its existence. Recommendations from the Procedure Committee of 1968–9 suggested that science (along with education and the arts) should be considered by a subcommittee of the proposed new Expenditure Committee. This recommendation was ignored by the Conservative government elected under Edward Heath in 1970, and a separate Science and Technology Committee was retained.⁵⁷ The following nine years saw committee inquiries into the issues that dominated science policy of the 1970s, such as defence research, the

2003, pp. 139–88, 170; HC Select Committee on Education and Science, *First Special Report 1967–68* (27 February 1968).

⁴⁹ HC Select Committee on Science and Technology, *First Special Report 1966–67* (1 February 1967). The other members were Norman Atkinson, Ernest Davies, David Ginsburg, Stephen Hastings, Robert Howarth, Sir Harry Legge-Bourke, Eric Lubbock, Sir Ian Orr-Ewing, Dr David Owen, Brian Parkyn and David Price.

⁵⁰ HC Select Committee on Science and Technology, *Second Special Report 1966–67* (16 February 1967), p. 3.

⁵¹ HC Select Committee on Science and Technology, *First Special Report 1967–68* (30 November 1967), p. 2; P.J. Laugharne, 'The evolution of specialist advice to select committees of the House of Commons in the twentieth century', *Parliamentary History* (1999) 18(2), pp. 169–87, 180.

⁵² Powell and Butler, op. cit. (11), p. 41.

⁵³ M. Rush and M. Shaw (eds.), *The House of Commons Services and Facilities*, London: George Allen & Unwin, 1974, pp. 149–55.

⁵⁴ HC Select Committee on Science and Technology, *Minutes of Evidence, Thursday, 2nd March, 1967, 1966–67* (9 March 1967).

⁵⁵ HC Select Committee on Science and Technology, *Second Report 1970–71* (21 July 1971), pp. 12–34.

⁵⁶ HC Select Committee on Science and Technology Sub-committee C, *Minutes of Evidence, Wednesday, 8th January, 1969, 1968–69* (20 January 1969); HC Select Committee on Science and Technology, *Second Report 1968–69* (27 March 1969); HC Select Committee on Science and Technology Sub-committee D, *Minutes of Evidence, Thursday, 12th June, 1969, 1968–69* (17 June 1969).

⁵⁷ HC Select Committee on Procedure, *First Report 1968–69* (23 July 1969); HC Deb 12 November 1970, vol. 806, c. 620.

reorganization of the nuclear power industry, population growth, seabed engineering and scientific research in British universities.⁵⁸ As such, the committee was able to exert an important influence over the direction of UK science policy. However, the restructuring of the Commons select committee system along departmental lines in 1979 brought that level of activity to an abrupt end.⁵⁹

A casualty of reorganization

The arrangements of committees that had developed as a result of Crossman's additions generated criticism from the Commons Procedure Committee, referring in a 1978 report to their evolution as 'unplanned and unstructured'.⁶⁰ Arguments had emerged during the 1970s calling for the rationalization of the select committee system so that each committee monitored the activities of a government department, but in the absence of a separate ministry for science, there could be no select committee on science and technology. This meant that its work would be transferred to a new committee on education, science and the arts, reflecting the remit of the then Department of Education and Science.⁶¹

The recommendations in the Procedure Committee's 1978 report were debated in the House of Commons in February 1979, but the Labour government of 1974–9 displayed little appetite for putting them into practice during their final troubled months before the May 1979 general election.⁶² During the election campaign, both Labour and Conservative parties indicated some support for the Procedure Committee's proposals in their election manifestos, and shortly after the Conservative election victory they were pushed through by the new Leader of the House, Norman St John-Stevas.⁶³ For the Conservative Party, these reforms were viewed as a way of strengthening Parliament's traditional role of controlling the executive. They envisaged that scrutiny of science would be taken up across the system, as Stevas made clear in the Commons debate on these proposals: 'I hope that all the new [departmental] Committees will pay special attention to scientific and technological issues within their fields of interest'.⁶⁴ While P&SC members put down amendments that called for the retention of the specialist committee, or for the separation of science and the arts from education, these were rejected and the reorganization went ahead.⁶⁵

Despite Stevas's statement, the reorganization had a noticeable impact on the House of Commons' ability to scrutinize science. The new Select Committee on Education, Science and Arts took education as its focus. Since it lacked the power to appoint subcommittees that could concentrate on other matters, it is perhaps unsurprising that during the 1980s this committee conducted only one major inquiry focusing on science, which considered

⁵⁸ The reports of both the Commons and Lords select committees on science and technology, accompanied by transcripts of witness evidence sessions, offer rich resources for historians of twentieth-century science in the UK and should not be overlooked.

⁵⁹ HC Deb 25 June 1979, vol. 969, c. 104.

⁶⁰ P. Aylett, 'Reform and consolidation: a new perspective on Commons Select Committees 1960–1980', *Parliamentary Affairs* (2019) 72(4), pp. 742–60, 752; HC Select Committee on Procedure, *First Special Report 1977–78* (17 July 1978).

⁶¹ HC Select Committee on Procedure, *First Special Report 1977–78* (17 July 1978), p. ix; HC Select Committee on Procedure, *First Special Report 1978–79* (12 March 1979), p. iv.

⁶² Aylett, *op. cit.* (60), pp. 755–6.

⁶³ Aylett, *op. cit.* (60), pp. 756–7.

⁶⁴ HC Deb 25 June 1979, vol. 969, c. 44. This decision spurred P&SC members in the House of Lords to propose the appointment of a Lords Select Committee on Science and Technology, whose members were duly appointed in January 1980. HL Deb 11 December 1979, vol. 403, c. 977. As is the case today, the membership included many eminent scientists.

⁶⁵ HC Deb 25 June 1979, vol. 969, cc. 219–20.

the future of the science budget.⁶⁶ In the resulting report, the committee members aired their discomfort with the committee's shortcomings, pleading for the power to appoint subcommittees and more members:

In the long term, however, we feel that just as the absence of a central department or a central advisory body militates against strategic thinking about research and development in Government, so the absence of a committee with wide ranging terms of reference in science and technology hampers the House of Commons in giving proper consideration to this important area ... We hope that the gap will be recognised by the re-appointment of a House of Commons Select Committee on Science and Technology.⁶⁷

This feeling persisted among the select committee membership. Minutes from a P&SC meeting in April 1987 note that a letter had been received from Sir William van Straubenzee (Conservative), the chairman of the Commons Select Committee on Education, Science and Arts and P&SC member. Van Straubenzee was looking for support from the P&SC in lobbying for the reinstatement of the specialist committee, bemoaning 'that the Select Committee had more than it could handle on Education and the Arts and was unable to pay enough attention to Science and wished that the Old Select Committee on Science and Technology could be re-established.'⁶⁸

Throughout this period MPs would invoke the opinions expressed at the beginning of the twentieth century by the British Science Guild by using the term 'neglect of science' in expressing their views about opportunities to debate science and the lack of a dedicated scrutiny mechanism in the House of Commons.⁶⁹ One example is a submission made by P&SC member Sir Ian Lloyd (Conservative) to a 1989–90 inquiry into the working of the select committee system in which he referred to 'the appalling neglect of science in the Commons which followed the demise of Airey Neave's [Science and Technology] committee'.⁷⁰

Just as scientists at the turn of the century felt undervalued by the elite, morale in the scientific community was rocked during the 1980s by Conservative-driven changes to the organization and funding of government-sponsored scientific research. These began with cuts to university budgets in 1981, followed in 1987 by a withdrawal of support for 'near-market' research that was seen as more appropriate for industry to undertake.⁷¹ At the same time civil service reform was causing organizational upheaval in many government research establishments throughout the 1980s.⁷² In the face of these policy changes, parliamentarians regretted not only the absence of a dedicated specialist committee but also a perceived dearth in scheduled debates on science policy. Jack Straw (Labour), then the shadow education secretary who secured a 1988 debate on 'British science', complained about the lack of opportunities for MPs to debate scientific issues: 'The Government have refused many demands for a debate on science by both sides of the House ... the

⁶⁶ HC Select Committee on Education, Science and Arts, *First Report 1984–85* (9 July 1985).

⁶⁷ HC Select Committee on Education, Science and Arts, *op. cit.* (66), p. xxx.

⁶⁸ 'Parliamentary and Scientific Committee: minutes of a meeting of the steering committee held on Tuesday, April 28, 1987', Papers of Lord Shackleton, S/445, Parliamentary Archives.

⁶⁹ HC Deb, *op. cit.* (36).

⁷⁰ Select Committee on Procedure, *The Working of the Select Committee System*, Memoranda (vol. 2) (14 March 1990), p. cxxxv; Emmeline Ledgerwood, 'Airey Neave: working for science in Parliament', *Conservative History* (2019) 11(7), pp. 58–9.

⁷¹ Agar, *op. cit.* (32), pp. 1–2, 62–99.

⁷² Emmeline Ledgerwood, 'Privatisation of UK government science: the changing working lives of scientific civil servants, 1970–2005', unpublished PhD thesis, University of Leicester, 2021, pp. 60–70.

last Government debate on science, according to the best researches of the library, was on 14 June 1985, two and three quarter years ago'.⁷³ Yet the Hansard record shows that other central science policy areas identified by Jon Agar as characterizing the 1980s, such as information technology, AIDS, biotechnology and the Strategic Defense Initiative, were the subject of debates in the Commons, sometimes on multiple occasions.⁷⁴ A comparison of parliamentary debates held during the 1970s and 1980s is needed to verify Straw's statement, but his view reflects the more widespread anxiety about government attitudes to science that were surfacing in the scientific community.

The prospects for committee scrutiny of science did not improve until 1991, when the government endorsed the Commons Procedure Committee's recommendation to reconsider 'the request of the Education Committee made in 1988 for two additional Members and the power to appoint a Sub-committee'.⁷⁵ A science and technology sub-committee was duly set up in January 1992 but only held a couple of meetings before the April 1992 election.⁷⁶ The Conservative victory under John Major signalled a key change in government attitude towards science policy. For the first time since the 1960s responsibility for science went to a minister of Cabinet rank, William Waldegrave, the Chancellor of the Duchy of Lancaster, and a new departmental body – the Office of Science and Technology (OST) – was set up within the Cabinet Office. Responsibility for the science budget for academic research that was distributed through the research council system was transferred to the OST, having previously been managed by the Department of Education and Science.⁷⁷ Waldegrave soon voiced support for the idea for the reinstatement of a separate Science and Technology Committee to mirror the post-election changes in the machinery of government:

This is a matter for the House, for the usual channels and for those other mysterious and scientific bodies. I hope that the House will take some steps to reflect the change in departmental organisation. Anything that Parliament does to raise the profile of science must be welcomed by all hon. Members.⁷⁸

In a debate on 'Departmental select committees' a few weeks later, a motion to set up a select committee to shadow the OST was approved, and except for a short break in 2007 associated with further changes in government departments, the Select Committee on Science and Technology has continued to operate as such ever since.⁷⁹

The quest for legislative science advice

During the 1979–92 hiatus in select committee scrutiny in the Commons, members of the P&SC put their energies into a parallel campaign designed to meet the first of the P&SC's 1964 goals: 'improved methods by which Members of Parliament can quickly get information from scientists about matters likely to be raised in Parliament'.⁸⁰ Their aim was to establish a unit along the lines of the Office of Technology Assessment (OTA) in

⁷³ HC Deb 29 February 1988, vol. 128, c. 716. The 1985 debate was on 'Government's policy for science'.

⁷⁴ Agar, *op. cit.* (32), pp. 62–138. For example HC Deb 11 July 1980, vol. 988, cc. 916–1013; HC Deb 27 February 1987, vol. 111, cc. 545–61; HC Deb 21 November 1986, vol. 105, cc. 799–864; HC Deb 13 January 1989, vol. 144, cc. 1100–61; HC Deb 14 November 1988, vol. 140, cc. 812–82; HC Deb 19 February 1986, vol. 92, cc. 327–75.

⁷⁵ *The Working of the Select Committee System: Government Response to the Second Report of the House of Commons Select Committee on Procedure, Session 1989–90* (1991), p. 19.

⁷⁶ HC Select Committee on Education, Science and Arts, *Fourth Special Report 1991–92* (4 March 1992), p. iii.

⁷⁷ HC Select Committee on Science and Technology, *First Report 1992–93* (10 December 1992), HC 228-I, p. vi.

⁷⁸ HC Deb 11 June 1992, vol. 209, c. 480.

⁷⁹ HC Deb 30 June 1992, vol. 210, c. 823.

⁸⁰ HC Select Committee on Procedure, *op. cit.* (1), p. 143.

Washington which had been set up in 1972 to supply members of the US Congress with detailed reports on technological issues of the day.⁸¹

The OTA was the ‘first legislative institution of its kind in the world’.⁸² In a recent article Chris Tyler and Karen Akerlof describe these units as being among ‘the most important public bodies you’ve never heard of’.⁸³ During the 1980s European politicians were inspired by the OTA model to pursue the establishment of similar units in their own legislatures.⁸⁴ The suggestion that the UK Parliament should have an office of technology assessment ‘in exactly the same way as such an institution serves the Congress of the United States’ was a question put to the prime minister in the Commons in April 1985 by Sir Ian Lloyd (Conservative).⁸⁵ He raised the concept again in June 1985 during a debate on ‘Government’s policy for science’.⁸⁶ Since the 1960s P&SC members had used strategies such as this to raise their concerns in Parliament. They tabled amendments and early day motions, asked questions of ministers, mentioned the proposals while speaking in debates and submitted evidence to committee inquiries.⁸⁷

Minutes of meetings held by the P&SC in the summer of 1985 indicate that Thatcher supported strengthening MPs’ access to scientific knowledge in Parliament, recording that she was sympathetic to the establishment of a P&SC ‘Science and Technology Group’ which aimed ‘to pick up on scientific issues of current interest and see that the scientific point of view was advanced’.⁸⁸ The following year the group noted, ‘The Group is beginning to play the greater role that the Prime Minister and Sir Robin Nicholson [her chief scientific adviser] wishes the Parliamentary and Scientific Committee to play’.⁸⁹ During its first year the group had organized the preparation of briefs for parliamentarians on the Animals (Scientific Procedures) Bill, AIDS and the ‘brain drain’ and made suggestions of possible subjects of inquiry to the Commons Select Committee on Education, Science and Arts.⁹⁰ The aim of this group was to ‘ensure that Technology Assessment becomes assimilated into the political system’.⁹¹ Lloyd became the torch bearer for the campaign,

⁸¹ John. H. Gibbons and Holly L. Gwin, ‘Technology and governance: the development of the Office of Technology Assessment’, in Michael E. Kraft and N.J. Vig (eds.), *Technology and Politics*, Durham, NC: Duke University Press, 1988, pp. 98–122, 100; Rhodri Walters, ‘The Office of Technology Assessment of the US Congress’, *Government and Opposition* (1992) 27(1), pp. 89–108.

⁸² N.J. Vig and H. Paschen, ‘Introduction’, in Vig and Paschen (eds.), *Parliaments and Technology: The Development of Technology Assessment in Europe*, Albany: State University of New York Press, 1999, pp. 3–35, 4.

⁸³ Chris Tyler and Karen Akerlof, ‘Three secrets of survival in science advice’, *Nature* (14 February 2019) 566 (7743), p. 175.

⁸⁴ ‘Agenda for meeting on 7 November 1985 of the P&SC Science and Technology Group’, Papers of Sir David Phillips, 0.67, Special Collections, Bodleian Library. Vig and Paschen, *Parliaments and Technology*, op. cit. (82); Vary T. Coates and Thecla Fabian, ‘Technology assessment in Europe and Japan’, *Technological Forecasting and Social Change* (1982) 22(3), pp. 343–61, 343; Joseph F. Coates and Vary T. Coates, ‘Next stages in technology assessment: topics and tools’, *Technological Forecasting and Social Change* (2003) 70(2), pp. 187–92; Laura Cruz-Castro and Luis Sanz-Menéndez, ‘Politics and institutions: European parliamentary technology assessment’, *Technological Forecasting and Social Change* (2005) 72(4), pp. 429–48. These early comparative analyses led Coates and Fabian to conclude that the ‘fundamental characteristics of parliamentary systems as compared to congressional/presidential systems’ could frustrate efforts to establish technology assessment units.

⁸⁵ HC Deb 25 April 1985, vol. 77, c. 986.

⁸⁶ HC Deb 14 June 1985, vol. 80, cc. 1154–55.

⁸⁷ Other examples: HC Deb 15 March 1963, vol. 673, c. 1736; HC Deb 24 February 1964, vol. 690, c. 115; HC Deb 24 July 1986, vol. 102, c. 599; EDM 59, *Joint Committee on Science and Technology*, 1990–1.

⁸⁸ ‘Parliamentary and Scientific Committee: minutes of a meeting of the Science & Technology Group held on 27th June 1985’, Papers of Lord Shackleton, op. cit. (68).

⁸⁹ ‘Parliamentary and Scientific Committee: Science and Technology Group discussion paper’ (27 February 1986), Papers of Sir David Phillips, 0.67, Special Collections, Bodleian Library.

⁹⁰ ‘Parliamentary and Scientific Committee’, op. cit. (89).

⁹¹ ‘Parliamentary and Scientific Committee’, op. cit. (89).

and after a fact-finding mission to the OTA with three other P&SC members in March 1986, the group concluded that ‘the principles underlying this organisation [OTA] can be developed and applied without undue difficulty within the parliamentary system’.⁹²

However, Lloyd’s conviction of the need for a technology assessment office was not shared by the senior civil servants briefing Thatcher about this proposal, warning her that ‘such an office would end up by acquiring its own political imperatives’.⁹³ Thatcher’s response to the proposal, illustrated by this account from P&SC member Michael Clark (Conservative), demonstrates both her scientific and her neoliberal values:

We went to see the then Prime Minister, now Lady Thatcher, and told her of our plans. She thought that it was a very good idea to have such a body to increase scientific knowledge in Parliament, so we asked for Government funding for it. She replied, ‘Oh no, certainly not. If it is such a good idea, you will find money for it from industry, academia and institutions outside Parliament.’ She then reached for her famous handbag, took out her cheque book and wrote a cheque for £100. She said, ‘Raise the money yourself, and let this be the first £100 to get it going.’⁹⁴

While as a scientist she supported the activities of the P&SC’s Science and Technology Group, her reluctance to spend public funds is an example of her ideological belief in letting the market decide if an idea or product merited financial support. John Biffen (Conservative), then the Leader of the House, was less positive about expanding the use of scientific knowledge in Parliament: ‘The debates in this place are conducted on the necessary information that is available, linked to the passion and the enthusiasm that must go with it. The debates will lose if they are drowned in a mass of technical gobbledegook.’⁹⁵ However P&SC members were not deterred by this lack of ministerial support for a formal legislative science unit, and the P&SC Science and Technology Group pressed on with their plans, presenting a blueprint for the new unit in April 1987 to the P&SC membership.⁹⁶ The proposed structure was for a body comprising two parts: a governing board drawn from the P&SC membership and an office headed up by a director and staffed by researchers. Meetings of the twenty-member board were envisaged as ‘a forum for a first hand exchange of knowledge and concepts between Parliamentarians and Non-Parliamentarians’, led by a senior MP as chairman and two vice chairmen, one parliamentarian and one non-parliamentarian. P&SC members would elect ten parliamentarians (including MPs, peers and members of the European Parliament) from among themselves, and then a separate panel of non-parliamentarian P&SC members would put forward the names of another ten members drawn from the scientific community.⁹⁷ Sir Trevor Skeet (Conservative), the P&SC chairman at that time, emphasized that the proposals aimed ‘to utilise existing machinery and to adapt it in our pragmatic way for the

⁹² ‘Technology assessment: an expanded role for the Parliamentary and Scientific Committee at Westminster’ (June 1986), Papers of Sir David Phillips, 0.67, Special Collections, Bodleian Library.

⁹³ Memo to the prime minister: ‘Meeting with Sir Trevor Skeet, Sir Gerard Vaughan and Sir Ian Lloyd’ (16 July 1986), PREM 19/1897 (with thanks to Jon Agar for sharing this reference).

⁹⁴ HC Deb 21 November 2000, vol. 357, c. 279.

⁹⁵ HC Deb 20 November 1986, vol. 105, c. 697.

⁹⁶ This aligns with Vig and Paschen’s assessment of the development of European legislative science advice units, identifying three stages in the institutionalization of these bodies: their initial founding, an adaptation to the institutional and political environment to assure survival, and gaining permanent status through performance evaluation and recognition. Vig and Paschen, ‘Technology Assessment in Comparative Perspective’, in Vig and Paschen, *Parliaments and Technology*, op. cit. (82), pp. 3–35.

⁹⁷ ‘Office for Technology Assessment for the Westminster Parliament, 9 February 1987’, Papers of Lord Shackleton, op. cit. (68), original underlining.

service of Parliament'. Future links between the new unit, the Commons Library and the select committees were discussed, and Skeet made it clear that the new body was to be a 'creature of Parliament and that the objectives would be stated in clear legal language and adhered to'.⁹⁸

Without government backing, the P&SC set up a charitable trust – the Parliamentary Science and Technology Information Foundation – in early 1988, seeking donations from academia, science and technology bodies and associate members.⁹⁹ Individual parliamentarians, research associations, large corporations, higher-education institutes and learned societies were among those who promised annual contributions totalling £18,700.¹⁰⁰ These ranged from one MP's offer of twenty pounds a year, a hundred pounds a year from some universities and polytechnics and £2,000 a year from the Royal Society to £5,000 a year from ICI and Esso.¹⁰¹ With this financial backing in place, the P&SC was able to set up its advisory board for the newly named Parliamentary Office of Science and Technology (POST) under the chairmanship of Lloyd, and appointed Dr Michael Norton, a former science attaché to the British Embassy in Washington, as POST's first director.¹⁰² The board was responsible for deciding which topics should be included in the programme of work, and the early production of briefing notes and more extensive technology assessments depended on written contributions made by P&SC members and temporary fellows supported by research council funding.¹⁰³ Finding a home for POST presented a major challenge, with the team operating in the early years out of the offices of one of its member organizations, the Royal Academy of Engineering, and then from rented accommodation.

Once POST was up and running Lloyd then tackled the question of securing parliamentary funding by raising the issue with the House of Commons Services Committee in 1991.¹⁰⁴ Questionnaires about the value of POST were circulated to MPs and peers to gauge parliamentarians' attitudes to its work.¹⁰⁵ While the responses were mostly

⁹⁸ 'Parliamentary and Scientific Committee: minutes of a meeting of the steering committee held on Tuesday, April 28, 1987', Papers of Lord Shackleton, op. cit. (68).

⁹⁹ 'Office of Technology Assessment (OTA) for the Westminster Parliament: development proposals, Appendix B', Papers of Sir David Phillips, 0.67, Special Collections, Bodleian Library.

¹⁰⁰ Papers of Sir David Phillips, op. cit. (99).

¹⁰¹ Papers of Sir David Phillips, op. cit. (99). Member organizations which promised annual contributions were the Aircraft Research Association (£250), the Asbestosis Research Council (£500), the Association of Consulting Scientists (£250), the International Centre for Cast Metals Technology (£140), the Cavendish Laboratory (£300), Esso Exploration & Production UK Ltd (£5000), the Health & Safety Executive (£130), ICI (£5000), the Independent Broadcasting Authority (£350), Sir Robert McAlpine & Sons (£1000), Macmillan Publishers Ltd (£500), the Plastics & Rubber Institute (£100), the Royal Society (£2000), the Royal Agricultural Society (100), Shell UK Ltd (£1000), the Society of Chemical Industry (£500), the Welding Institute (£250), the Wellcome Foundation Ltd (£750), the World Sugar Research Organisation Ltd (£200), the University of Dundee (£100), Loughborough University (£100), the Open University (£100), the Polytechnic of Central London (£100), Liverpool Polytechnic (£50) and Sheffield City Polytechnic (£100).

¹⁰² 'Parliament's first POST', *New Scientist* (22 April 1989) 122(1661), p. 25. The first board members were: Sir Ian Lloyd MP (chairman), the Lord Kennet (vice chairman, parliamentary), Sir Roger Elliott FRS (vice chairman, non-parliamentary), Dr Michael Clark MP (treasurer), Dr Michael Norton (director), the Earl of Bessborough, Baroness Lockwood, Lord Rea, Lord Rodney, Jim Cousins MP, W.E. Garrett MP, Sir Gerard Vaughan MP, Ann Winterton MP, Michael Elliott MEP, Sir Frederic Warner FRS FEng, Professor Sir Hans Kornberg FRS, Sir Diarmuid Downs FRS FEng, Sir Alastair Pilkington FRS FEng, Lord Flowers FRS and Professor John Midwinter FRS FEng.

¹⁰³ Parliamentary Office of Science and Technology (POST), *Annual Report 1991–92*; M. Norton, 'Origins and functions of the UK Parliamentary Office of Science and Technology', in Vig and Paschen, *Parliaments and Technology*, op. cit. (82), pp. 65–92.

¹⁰⁴ POST, op. cit. (103).

¹⁰⁵ Papers of Lord Shackleton, op. cit. (68).

positive, concerns were raised whether its activities duplicated those of the House of Commons Library research services. These were not sufficient to deflect the Commons Services Committee from recommending parliamentary funding for POST from 1 April 1993, at which point responsibility for POST transferred to the House of Commons Commission, and its staff moved into an office on the parliamentary estate in 1994.¹⁰⁶ However, its financial status remained subject to review by the Information Committee until permanent funding was secured in 2001.¹⁰⁷ This ensured POST's position alongside the Science and Technology Committee as part of the institution of Parliament. The creation of POST serves as an example of the Conservative philosophy of letting the market decide, with Lloyd driving its establishment along an idealized linear progression from innovation to a product in development and then to market leader.

The factors that contributed to change

As Geddes and Meakin have pointed out, political scientists have arrived at varying analyses of the drivers and obstacles associated with institutional change.¹⁰⁸ It can be seen as a result of a window of opportunity (usually at the beginning of a Parliament), a reform agenda with a coherent set of proposals, and leadership, sometimes from the backbenches.¹⁰⁹ However, some studies argue that it is unusual for backbenchers to be actively interested in parliamentary procedure.¹¹⁰ Another evaluation is that change results from crises or shocks, a confluence of circumstances that provoke change or a weakening of barriers to change, yet the executive's control of its own party and the parliamentary timetable can obstruct reform.¹¹¹

Key factors have emerged from this study which add to these understandings of how institutional change in Parliament happens. In both cases – the establishment of the Commons Select Committee on Science and Technology and POST – individual backbenchers, especially members of the P&SC, took great interest in bringing proposals for these bodies to the attention of other members of the House.¹¹² They also wrote articles and pamphlets that were circulated beyond Westminster.¹¹³ P&SC parliamentary members that served on the Commons Select Committee on Education, Science and Arts led calls for the reinstatement of a separate committee on science and technology, and many P&SC members made financial contributions to POST in its early stages.¹¹⁴

However, it was the attitudes of government ministers that ultimately determined how the history of the specialist select committee played out. Crossman's commitment to reform, and indeed science, secured its creation in 1967. In the 1980s, the absence of

¹⁰⁶ POST, op. cit. (103).

¹⁰⁷ HC Deb 21 November 2000, vol. 357, cc. 276–283; Information Committee, *The Future of the Parliamentary Office of Science and Technology, First Report 1999–2000* (17 July 2000).

¹⁰⁸ M. Geddes and A. Meakin, 'Explaining change in parliaments: dilemmas of managerial reform in the UK House of Commons', paper presented to the PSA Annual Conference, 26–8 March 2018, p. 26.

¹⁰⁹ Philip Norton, 'The Norton view', in D. Judge (ed.), *The Politics of Parliamentary Reform*, London: Heinemann Educational, 1983, pp. 54–69.

¹¹⁰ M. Russell, "'Never allow a crisis to go to waste": the Wright Committee reforms to strengthen the House of Commons', *Parliamentary Affairs* (2011) 64(4), pp. 612–63.

¹¹¹ A. Kelso, *Parliamentary Reform at Westminster*, Manchester: Manchester University Press, 2009; T. Wright, 'Prospects for parliamentary reform', *Parliamentary Affairs* (2004) 57(4), pp. 867–76; M. Flinders, 'Shifting the balance? Parliament, the executive and the British constitution', *Political Studies* (2002) 50(1), pp. 23–42.

¹¹² HC Deb 15 March 1963, vol. 673, c. 1736; HC Deb 24 February 1964, vol. 690, c. 115; HC Deb 24 July 1986, vol. 102, c. 599; EDM 59, Joint Committee on Science and Technology, 1990–1.

¹¹³ A. Albu, 'The Member of Parliament, the executive and scientific policy', *Minerva* (1963) 2(1), pp. 1–20; Conservative Political Centre, *Change or Decay: Parliament and Government in Our Industrial Society* (1963).

¹¹⁴ Papers of Lord Shackleton, op. cit. (68).

the science and technology committee was down to government implementation of proposals from Parliament itself to reorganize the committee system rather than an articulated Conservative position against scrutiny of science in Parliament. There is evidence in the P&SC minutes that Thatcher believed that MPs should have access to scientific knowledge, yet this did not translate into support from her or the Leader of the House to reinvigorate committee scrutiny of science after the 1979 reorganization. With the change of government in 1992, and the promotion of science within the machinery of government with the creation of the OST, ministerial support was forthcoming for the reinstatement of a matching select committee.

In the case of POST, according to Clark's anecdote about Thatcher, she supported the concept of a legislative science advice unit and the P&SC's efforts to incorporate more scientific knowledge into Parliament, but in keeping with her broader efforts to reduce state provision of services believed that any dedicated unit should be funded privately. By setting up a charitable trust that allowed POST to start operating, the P&SC demonstrated POST's value to parliamentarians, so that when Lloyd moved to the next stage of seeking parliamentary funding, he could garner support from across both Houses. Therefore POST owes its existence to the efforts of individual parliamentarians, first through the conviction of Lloyd and fellow P&SC members that Westminster needed a legislative science advice unit, and then through the support of a cohort of MPs and peers for POST's activities once it was operational.

The bumpy trajectory of the select committee resulted from being part of broader waves of reform to the select committee system and changes in government departmental structures, in contrast to the focus of P&SC members in pursuing a specific goal to establish POST as an integral element of the parliamentary structure. While the routes were different, illustrating the varying influences on institutional change, since the Commons select committee and POST became established as permanent features of Parliament they have both operated as intended in meeting the two P&SC goals of 1964: improving both access to information and the machinery to scrutinize policy.

How the select committee and POST enable MPs' scrutiny of science

The purpose of the Select Committees on Science and Technology in both the Commons and the Lords remains the same as when the specialist select committee in the Commons was first established in 1967. Committee members, parliamentary staff and specialist advisers liaise in setting the programme of work that is geared towards the scrutiny of government policy and holding government to account. The external specialist advisers offer guidance on potential subjects of inquiries, identifying topics that matter to the public or are of national relevance. This inquiry work revolves around the gathering of information from experts and policy makers via invitations for the submission of written evidence, correspondence with key witnesses and oral evidence sessions. The information gathered is then analysed and published in committee reports.¹¹⁵

The Commons select committee is currently exploring strategies that it hopes will make its work more relevant and accessible to the wider public. One was initiated in 2016 by running online evidence checks inviting citizens to comment on the evidence used to underpin certain areas of government policy such as driverless cars or gene editing.¹¹⁶ It has put emphasis on increasing its follow-up work through organizing

¹¹⁵ SCS046, written evidence submitted by the House of Commons Science and Technology Committee to the Liaison Committee inquiry into 'The effectiveness and influence of the select committee system' (2019).

¹¹⁶ UK Parliament, 'Evidence check' web forum, at www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/science-and-technology-evidence-check-forum (accessed 29 April 2020).

debates in the House of Commons chamber, maintaining correspondence with expert witnesses and tabling parliamentary questions. It is also experimenting with methods to extend its reach beyond Parliament, concentrating on public engagement by inviting the public to suggest subjects for future inquiries, taking contributions from the public gallery and Twitter during an evidence session and holding evidence sessions outside Westminster.¹¹⁷

For POST the mission has always been to provide independent, impartial advice on a wide range of public policy issues; its horizon-scanning activities enable staff to produce briefings in advance of issues becoming topical.¹¹⁸ This complements the work of library researchers who tend to respond to individual members' enquiries and produce summary briefings based on published material; the respective staffs of the library, POST and the select committees liaise regularly. However, POST's publications go further by connecting parliamentarians with academic researchers through peer-reviewed briefing 'POSTnotes' written for the layperson.¹¹⁹ MPs often acknowledge POST's work during debates in the Commons chamber.¹²⁰ Many POSTnotes are written by PhD students funded through a rolling fellowship scheme, drawing on reviews of the research literature as well as interviews conducted across academia, industry, government and the third sector.¹²¹ POST also runs seminars for the public and parliamentarians and aims to position itself as a bridge between Parliament and academia through the work of its Knowledge Exchange Unit, which seeks to develop stronger relationships between researchers and policy makers.¹²² One of POST's more recent initiatives is to set up databases of experts, for example those with knowledge relevant to the 2021 UN summit on climate change and the COVID-19 pandemic.¹²³ POST collaborates with other legislative science advice units through the European Parliamentary Technology Assessment Network.¹²⁴ Increasingly POST is being seen as a model unit by legislatures seeking to set up similar units, and POST staff have collaborated with international peers in developing a set of resources which offer guidance on legislative science advisory options.¹²⁵

Conclusion

Incremental processes of institutional change from 1960 to 2000 secured MPs' current capacity to scrutinize science at Westminster. The fortunes of the Commons Select Committee on Science and Technology ebbed and flowed within the evolution of the broader Commons select committee system and changes to government departments during the second half of the twentieth century. In contrast, in the case of POST it was the

¹¹⁷ SCS046, op. cit. (115).

¹¹⁸ Kenny et al., 'Legislative science advice', op. cit. (16), p. 5.

¹¹⁹ SCS045, written evidence submitted by the Participation and Research and Information teams to the Liaison Committee inquiry into 'The effectiveness and influence of the select committee system' (2019).

¹²⁰ Recent examples include: HC Deb 12 June 2018, vol. 642, c. 299WH; HC Deb 2 May 2019, vol. 659, c. 408; HC Deb 10 March 2020, vol. 673, c. 217.

¹²¹ POST, op. cit. (30). The archive of POSTnotes, recently made available online, is an important resource for historians of twentieth-century science policy. See <https://post.parliament.uk/type/postnote> (accessed 14 September 2021).

¹²² POST, op. cit. (30).

¹²³ POST, 'COVID-19 outbreak: what are experts concerned about?' (11 May 2020), at <https://post.parliament.uk/covid-19-outbreak-what-are-experts-concerned-about> (accessed 14 September 2021).

¹²⁴ European Parliamentary Technology Assessment, at <https://eptanetwork.org> (accessed 14 September 2021).

¹²⁵ Michele Catanzaro, 'Spain to establish parliamentary office of science', *Nature*, 18 December 2018, DOI: 10.1038/d41586-018-07823-x; 'Scienza in Parlamento', <http://www.scienzainparlamento.org> (accessed 14 June 2019); POST, op. cit. (30).

conviction of individual MPs that saw it develop from an external, self-funded enterprise to become a permanent office within the institutional framework.

Throughout the period from 1960 to 2000, P&SC provided a focus for supporters of these campaigns, the minutes of its meetings recording how members from Parliament, industry and academia came together to advocate for these two mechanisms that are now woven into the fabric of Parliament. Historic perceptions within the British scientific community about the political elite's neglect of their work persisted throughout the twentieth century, articulated by the lobbying activities of P&SC members that called for change to ensure that science was not neglected in the House of Commons. During the 1980s, a period when the scientific community felt under threat, the use of such terminology reflected a very real concern among parliamentarians that the absence of a dedicated scrutiny mechanism in a specialist select committee meant that they were unable to scrutinize government policy for science effectively.¹²⁶

The impact of these processes of institutional change on Parliament's ability to scrutinize science policy has received little scholarly attention. Further research is now needed to assess how parliamentarians' use of the mechanisms described above has influenced the outcome of government policy making.¹²⁷ This could be achieved through further analysis of parliamentary papers and archival records combined with the conduct of oral-history interviews with MPs, parliamentary staff and scientific advisers. Such a historic study would enhance contemporary analyses of MPs' use of research evidence, heightened during the COVID-19 pandemic, by exploring whether MPs in the latter half of the twentieth century were truly 'armed with the necessary background of knowledge'.

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¹²⁶ Agar, *op. cit.* (32), p. 98.

¹²⁷ Kenny, Rose et al., *op. cit.* (16).

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