ESSAY REVIEW

OUTWARD BOUND

by

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Peter Collins, who worked as a policy officer and historian for the Royal Society for 32 years, has written an invaluable, eye-opening account of this premier organization for science, from the Tercentenary of 1960 through to the 350th anniversary of 2010. In doing so he fills a considerable gap in the historical literature. The account is meticulously sourced, drawing on Collins’ unparalleled knowledge of the recent archives of the Society, as well as interviews, the memories of colleagues and the material held in external collections. But the volume is more than that. Between 1960 and 2010 the Society was led by 10 scientists—Howard Florey, Patrick Blackett, Alan Hodgkin, Alexander Todd, Andrew Huxley, George Porter, Michael Atiyah, Aaron Klug, Bob May and Martin Rees—but Collins has resisted, rightly, the temptation to organize his account as a chronology of presidents. Instead, his stated aim is ‘to analyse some key features of the Society’s approach to promoting science … and thus to uncover something of its identity’ (p. xi). The chapters therefore explore these key themes and features.

If we step back and look at the most significant changes in the organization’s recent history, the most striking is that the Royal Society, through the years since the Second World War, has become more open, more publicly visible and more likely to take action in public than was the case, and this transformation has been partly deliberately sought but also partly thrust reluctantly upon it.

Collins opens his history with a case in point. In 1945 the Society had to elect a new president. Should the president be chosen solely because he was ‘demonstrably in the very top rank of acknowledged scientific achievement’ or was it the case that, under ‘exceptional circumstances’ (p. 9), other characteristics might be necessary, such as political acuity? The physicist Percy Andrade ‘wanted the Society to be more outward facing, engaging more effectively in public life and injecting science into the highest levels of policy-making’ (p. 7), and asked Fellows to sign up in support. He backed the politically adept Henry Tizard, much to the latter’s mortification. The result was embarrassment all round. This intense reaction tells us something significant. It was not the case that Fellows opposed

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engagement in public life. Instead, Andrade’s mistake was to underestimate just how strongly the Society in 1945 was committed to discretion. Political influence might be an aim, but it was to be achieved through a quiet word in the Athenaeum, not through open, public campaigning. Fellows preferred the election of the cantankerous, awkward Robert Robinson rather than the man with the political track record, Tizard, to uphold this view.

Post-war science was increasing in expense and scale. Government spending on research was channelled through the defence ministries, the University Grants Committee, the Department of Scientific and Industrial Research (DSIR) and the other research councils. Furthermore, as government funding increased, so did the determination of bodies such as the Treasury to ensure that public funds were accountable. This context of tightening state control over publicly funded research created difficulties for the Royal Society, a private body jealous of its independence and with a desire of influence. When, in the months after Sputnik, Harold Macmillan suggested that a small amount of extra cash might be made available for basic research, the Royal Society ‘made full use of the opportunity to exceed its brief and press its case for an explicit role in the running of British science’ (p. 34). In particular, a scheme was floated in which the Society would have a strong role in a new ‘Scientific Research Grants Committee’, an idea that originated with the executive secretary David Martin. Nevertheless, despite the best efforts of one of the most able Society presidents, Howard Florey, such ambitions wilted when confronted with, frankly, more powerful wills. The structure of science policy and state organization of science funding that emerged in the early 1960s, in particular as framed by the committee chaired by Sir Burke Trend, which reported in 1964, left the Society at the margins of the formal running of British science. In retrospect, this settlement was perhaps in everyone’s best interest. ‘Bereft of a significant formal locus in the new dispensation’, notes Collins, the Society focused on ‘a series of other missions’ (p. 54): independent policy advice, continuing to take the lead on non-governmental aspects of international scientific relations, funding niche but high quality research professorships and readerships, and spending its relatively small Parliamentary grant-in-aid wisely.

Contrary to expectations, in terms of influence on policy, the evidence Collins puts before us shows that the Royal Society became more effective the more it acted publicly rather than discreetly. In the 1960s and 1970s, discreet pressure did little to shape either of the settlements associated with Trend or Lord Rothschild. But with deepened in-house policy studies, and led by presidents such as George Porter, Aaron Klug and, in particular, Michael Atiyah, ‘who was not shy of engaging with political issues’ (p. 141), the Society intervened publicly on significant issues in the 1980s and 1990s, including support for the science base, BSE, the use of depleted uranium, genetically modified foods, the public understanding of science and climate change. If there is a lesson from this history, it is this: continue to be emboldened to be the open, public voice of evidence-based policy.

In the second area, international relations, the Society has always played a distinctive role. The context of the Cold War and increasing globalization made this role even more prominent. The Society rebuilt relations with the Soviet Academy of Sciences after the rupture of the Lysenko affair. It resisted pressure to break such links during the Czechoslovakia crisis of 1968, and, even more controversially, when the Soviet Union’s treatment of dissidents, including scientists such as Andrei Sakharov, provoked intense disquiet among Fellows. Likewise, links with China were rebuilt before and after the Cultural Revolution, and the Society was a leading agent of scientific diplomacy in the ‘springtime for science’ under Deng Xiaoping. Unlike the US National Academy of
Sciences, the Royal Society refused to break contact after Tiananmen in 1989, instead sending a message of ‘concern and goodwill’ to the beleaguered Chinese academy. Throughout, the desire has been to ‘keep open the doors of communication between nations at times of international tension’ (p. 166). And yet, one wonders what might have happened if, say, John Ziman’s 1974 campaign to take a much stronger, public line on the treatment of Soviet dissidents had succeeded. The guiding assumption was that sanctions do more harm than good, yet the case of South Africa, where the Society worked hard to maintain scientific relations, is also one where, demonstrably, broad sanctions did ultimately bring about profound political change. Sometimes the door should be shut.

International activities were ‘the Society’s highest single priority in terms of annual expenditure’ in 1960, a pattern that remained true for the 1960s and 1970s (p. 263); but, from the 1980s to the present, research appointments became more and more significant. The Society had recycled philanthropic donations to fund research studentships and fellowships (from the late nineteenth century) and research professorships (from the 1920s). By the 1960s this activity supported about 30 senior research positions, and the early 1960s negotiations added a handful of publicly funded research professorships. As Collins points out, a distinctive feature of these Royal Society research awards was that they were 'made to individuals, not to the institutions...[which] gave the post holders considerable clout in negotiations', enabling them to focus on research alone and not have to take up other, distracting duties. In the 1980s, faced with the cuts to university research under Margaret Thatcher, the Society made one of its boldest decisions: to sacrifice its 130-year-old Scientific Investigations Grant scheme to help fund a massive expansion of individual support, 100 Royal Society University Research Fellowships. The Society nevertheless elected Thatcher a Fellow, under Statute 12, albeit after heated argument.

While policy work, international activities and research appointments were three gathering strengths of the Royal Society over the past five decades, there have also been blind spots. Built around the narrow Anglophone concept of ‘science’—the obligatory contrast at this point is to broad German Wissenschaft—the Society has generally avoided the social sciences. In 1967, when the Society, following its desire to open and keep open international doors, accepted the role of British sponsor of the International Institute for Applied Systems Analysis (IIASA), the results were unedifying. IIASA was designed as a Cold War bridge between East and West. But with little feel for what made good social science, even when, as in the IIASA case, the science was based on quantitative modelling methods, the Royal Society was never sure of IIASA’s ‘scientific merits’, and eventually the UK dropped out of the organization (p. 180).

Likewise, industrial and technological matters have been a source of discomfort. Despite the bulk of research and development in the UK being industrial in character, the Royal Society’s fellowship and priorities have only recently begun to reflect this fact. Some of this blindness was self-imposed. Robinson, who had consulted widely for industry, used his Anniversary Addresses to highlight academic ‘fundamental research’ (p. 23), rather than impure applications. Occasional efforts to redefine the organization of the Society by adding a ‘C’ section concerned with industry, engineering and applications, equal to the ‘A’ (Physical Sciences) and ‘B’ (Biological Sciences) sides, came to nought. The Fellowship of Engineering (later renamed the Royal Society of Engineering), established in 1976, was largely a response to inaction by the Royal Society. Only from the 1980s onwards have applications and research translation become a priority within the Society’s policies.
Another area of disappointingly slow change has been the support of women in science. The first female Fellows—Kathleen Lonsdale and Marjory Stephenson—were elected in 1945. At the start of the period covered in this history, 1960, 13 Fellows were female (2.2%), yet by 2010 the figure and proportion had barely risen to 72 (5.3%). Despite well-intentioned innovations, such as the Dorothy Hodgkin fellowships (from 1995, for young career scientists with ‘a special need for flexible arrangements’), this pattern suggests that more substantial action was required. Hodgkin herself, Nobel Prize winner, fifth female Fellow (elected 1947), was also the first female research professor supported by the Royal Society in 1960. It took 23 years before a second was appointed (Anne Warner, 1983).

Collins has produced an admirable history of an institution he knows well. It is an institution that has protected its autonomy, and consistently stood for a restricted, narrow, but effective kind of excellence. He quotes, in context approvingly, the view expressed in *Nature* in 2010 that the Royal Society embodies ‘the right kind of elitism’ (p. 272). But it is also an institution, reading against the grain, that missed progressive opportunities: refusing to follow Andrade’s invitation to be more publicly engaged in the immediate post-war years; allowing through inaction a split between academies supporting fundamental science and engineering (when there is no split in nature); and not doing more to support female scientists. However, other opportunities were seized, and the balance is positive. Collins shows us, therefore, how the Society has become—has had to become—‘unreservedly outward looking’ (p. 275). It is all the better for it.