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Distributed Editorship: editing the Royal Society journals in the late nineteenth and twentieth centuries¹

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Abstract

“Journal editor” has been a familiar and respected role for British academics since the late nineteenth century. Yet in 1752, the Royal Society had intentionally replaced the editor of the *Philosophical Transactions* with an editorial committee, and over the course of the nineteenth century, it had created an increasingly complex system in which the editorial work and responsibility were distributed among many individuals. In 1902, the suggestion that the Society ought to appoint an editor, specifically for its (newer) *Proceedings*, offers an opportunity to explore what the role of “editor” was believed to be: why might appointing an editor benefit the Society and its journals? The Royal Society did not in fact appoint editors for its journals until the late twentieth century, and by that time it had also acquired a (paid) “assistant editor” and a set of “associate editors”. Examining the Royal Society’s processes reminds us that editing a journal could be done without an “editor”; and that, with or without an “editor”, the function can be shared by many other people. The different distribution of work and responsibility offers insight into the formation of the role of academic journal editor in the twentieth century.

Keywords

Royal Society; editorship; scientific journals; academic publishing; nineteenth century; twentieth century

Editorship around 1900

In November 1902, Henry Armstrong, one of the vice-presidents of the Royal Society of London, suggested that it would be “desirable to consider whether the appointment of an Editor of

¹ This article is part of the Special Issue on Scientific Editors and Editorship, with Anna Gielas and Aileen Fyfe as the guest editors. It is based upon research funded by the UK AHRC grant AH/K001841.

the Society's publications is not called for".² His suggestion reminds us that editorial work need not be vested in a single individual called an editor. The Royal Society was then processing about 120 submitted articles per year, most of which ended up either in the Society's *Proceedings* (founded in 1831) or in one of the two series of its *Philosophical Transactions* (founded 1665, divided 1887). The Society managed to evaluate, select and publish over 2,000 pages of print each year, without the assistance of a person formally designated "Editor". This might seem a pedantic point, for the Society clearly did have someone organising its editorial matters – the role was routinely undertaken by one of its two secretaries – but the fact remains that Henry Armstrong felt that having an editor would be a better arrangement.

The lack of an editor for the Royal Society's publications dated back to 1752, when the Society took over the ownership and management of the *Philosophical Transactions*. Until that point, the *Transactions* had been run by a series of individual editors, starting with Henry Oldenburg in 1665 and ending with Cromwell Mortimer in 1752. These men had all been secretaries to the Royal Society, which created an association between the *Transactions* and the Society. After Mortimer's death, the Society's Council decided to take corporate control of the *Transactions*. The aim was to eliminate "any future Inconveniences for the want of a due Attention to the proper choice" of papers: actual or potential editorial incompetence or idleness was presented as a risk to "the Reputation of the Society".³ In place of an individual editor, the Council decided "to appoint a Committee who should, from time to time as occasion should require, assemble together, and select from the said Papers... such of them as they should think proper to be printed". This collective editorial decision-making, it was claimed would better "tend to the Credit and honour of this Society".⁴ As Noah Moxham shows elsewhere in this issue, the resulting collective editorial processes could still be dominated by senior officers of the Society if they were determined to do so.⁵ But the conviction that it was safer for the reputation of the Society *not* to leave editorial matters to one individual would persist.

During the nineteenth century, the Royal Society created an increasingly complex set of editorial practices to enable publication decisions to be produced by a committee of its fellows, with expert assistance from other fellows acting as referees.⁶ Except for the absence of a designated "editor", the system has much in common with the editorial boards and peer reviewers that are now standard elements of most modern academic journals. However, in the years around 1900, the Royal

² Memorandum from Henry Armstrong, in Royal Society Council Minutes Printed (hereafter RS CMP) vol. 8, 6 Nov. 1902.

³ RS Council Minutes (Originals) [hereafter RS CMO] vol. 4, 23 Jan. 1752.

⁴ RS CMO/4, 15 Feb. 1752.

⁵ Moxham, this issue...

⁶ (Moxham & Fyfe, 2018).

Society's editorial practices could be seen as out of step with the times. The increasing diversity of scientific journals brought a wider variety of models of editorship, and editorship was increasingly valued as a respectable element of an academic career.

A century earlier, there had been a moderately clear distinction between the sorts of periodicals run by learned societies, and the new wave of journals run by independent editors or publishers. In contrast to the German professor-editors described elsewhere in this issue by Martin Gierl and Anna Gielas, early independent editors in Britain, like William Nicholson or Alexander Tilloch, had been on the fringes of scholarly respectability.⁷ Yet the involvement of university professors in journal editing, including Thomas Thomson, Robert Jameson and later William Thomson, suggested that editing was coming to be a respectable activity for British (or at least, Scottish) university academics. By the late nineteenth century, the establishment of new research fields was increasingly marked by the creation of a new journal: sometimes by a society, but sometimes by a leading proponent of that field. For instance, Michael Foster founded the *Journal of Physiology* (1878); Karl Pearson launched *Biometrika* (1901); Benjamin Moore launched the *Biochemical Journal* (1906); and William Bateson established the *Journal of Genetics* (1910). The non-academic editor had not disappeared: in 1900, William Crookes and Norman Lockyer were its most high-profile representatives, but their weekly journals were a different breed from the journals in which detailed accounts of original research appeared.⁸ Scientists might send a preliminary note to *Nature* to claim priority, but it was the disciplinary journals that would ultimately carry the full research paper, and these were usually run by academics (sometimes working for a society, sometimes not).

The increasing prominence of editors within the academic world can be seen in the notices of recently-deceased fellows that were part of the annual address by the Royal Society president. In 1922, for instance, Charles Sherrington's anniversary address noted the deaths of a number of editors active around 1900: the editors of the *Biochemical Journal* (Benjamin Moore), the *Journal de Mathématique* (Marie Camille Jordan), and the *Zoological Record* (David Sharp).⁹ Three years later, he would note the deaths of the editors of the *Annalen der Mathematik* (Felix Klein) and the *Journal of Physiology* (John Newport Langley).¹⁰ These notices demonstrate that editorial work was coming to sit alongside teaching and research as something that might be expected to be part of an academic career.

⁷ Gierl, this issue; Gielas this issue. On Tilloch and Nicholson, see (Watts, 2014).

⁸ Baldwin, this issue.

⁹ 'Address of the president, Nov. 1922', *ProcA* 102 (1923): 374-8.

¹⁰ 'Address of the president, Nov. 1925', *ProcA* 110 (1926): 4-6.

Unlike the Royal Society in 1902, some learned society publishers already had editors. For instance, the Royal Geographical Society's *Journal* had had an editor from the 1830s; and the *Journal* of the Chemical Society had a paid academic editor (and a sub-editor) from at least 1884.¹¹ Given Henry Armstrong's close links to the Chemical Society, this may well have been the model he had in mind. Exploring the background and consequences of Armstrong's suggestion offers us an opportunity to consider what the role of an editor was perceived to be in the years around 1900.

First, however, we will investigate the ways in which editorial labour was already being done at the Royal Society, through an examination of the way tasks were carried out – and distributed among individuals – during the time when George Stokes was secretary in the late nineteenth century. Then, we will look more closely at Armstrong's 1902 arguments in favour of an editor, and what they imply about the problems with existing processes. Finally, we will survey the changes in editorial personnel at the Society in the twentieth century, culminating with the appointment of editors for each journal in 1988. Worries about the declining status of its journals in the twentieth century (particularly in the biological sciences) changed the Royal Society's expectations of the editorial role from that of an efficient organiser or manager, to a prominent figurehead who would attract authors. The distribution of the editorial role among multiple people is a common thread throughout this story, but the appointment of paid editorial staff enabled a separation between the routine paperwork of editing, and the intellectual responsibility of editing.

The Management of Editorial Work in the late nineteenth century

The mathematical physicist George Gabriel Stokes was the longest-serving secretary in the Society's history: his three decades as secretary were followed by a stint as president, from which he finally retired in 1890. He was not authoritarian, as Joseph Banks had been, but he was an efficient administrator, and the amount of work – both editorial and other – that he had managed for the Society was only fully appreciated once he retired. The Royal Society always had two secretaries at any one time, and during the late nineteenth century, the habit was for one of them to focus on "external" matters (e.g. correspondence, relationships to other societies, and advice to government) while the other managed the Society's "internal" matters (e.g. meetings of the fellowship, and the publications). George Stokes had filled the internal role since the 1850s, and he was in no doubt that

¹¹ (Newman, 2019); (Mussell, 2007), p.129-30.

this meant he was *de facto* the editor. Stokes welcomed this identity, telling a contemporary in 1884 that, “I am editor of the *Transactions*”.¹² But what did this editorial role involve?

A major component of Stokes’s role was the management of the Society’s complex editorial process (see Figure 1). Its core elements had been created in 1752: an editorial committee (the “Committee of Papers”) that collectively made the decisions about what to publish; and a gate-keeping process that meant all papers considered by the committee had already been vetted. All papers had to be read at the general weekly meeting of the fellows before they could be considered for possible publication; and they could only be presented at such a meeting if they were “communicated” by one of the fellows. The requirement for reading at meetings was dropped in the 1890s, but the insistence on “communication” remained until 1990.¹³ The extent of scrutiny expected of communicators was ambiguous, but by the early twentieth century, they were expected to confirm that they had indeed read the paper, and “considered it of sufficient merit to be submitted”.¹⁴ These gate-keeping processes helped weed out weak or unsuitable papers ahead of submission, which is why the Society could publish over 80% of papers submitted until the late twentieth century.¹⁵

Figure 1: The Royal Society’s editorial system c.1900. Most of this system was in place in Stokes’s day; except for the green “chairmen”, whose sub-committees were created in 1896.

In the 1830s, an additional element had been introduced: for papers being considered for publication in the *Transactions* (but not yet in the new *Proceedings*), the committee would seek the written opinion of (usually) two fellows, or “referees”. The introduction of written refereeing was a response to critiques about the variable quality of editorial decisions being made by the committee. Referees could help the committee to make more secure decisions, not just because of their expertise, but also because they could take the time to read the entire text with care.¹⁶ This combination of editorial committee plus referees was also used by other learned societies around this time, including the Geological, Astronomical and Geographical societies.¹⁷ In the 1890s, discipline-specific sub-committees would be added to the system, to help the secretaries select and evaluate referee reports.

In this system, no single individual made editorial decisions, in the way that (say) Norman Lockyer did at *Nature*. It is clear that Stokes had ample opportunity to advise and recommend, but he

¹² Stokes to Owen, 1 Nov. 1884, CUL Stokes Papers ADD. 456 069. Stokes was writing in response to a letter in which Owen blamed co-secretary Foster for a mistake in the labelling of figures, see Owen to Stokes, 10 Oct. 188[4] [misdated 1886], CUL Stokes Papers ADD 456 068.

¹³ (Fyfe & Moxham, 2016).

¹⁴ RS CMP/9, 20 Feb. 1908

¹⁵ (Fyfe, Dondio, Torny, & Squazzoni, forthcoming).

¹⁶ (Moxham & Fyfe, 2018).

¹⁷ On the Geological and Astronomical, see (Csiszar, 2018), Ch. 3. On the Geographical, see (Newman, 2019).

had only limited power to act on his own authority: he could decline to accept a paper for consideration by the Society (for instance, by suggesting that it would be more appropriate for one of the more specialised societies); and he could accept short papers for publication in the *Proceedings*. Compared to an autonomous editor, in full charge of his own journal, Stokes's editorial power was heavily circumscribed. The distribution of editorial responsibility among so many fellows protected the Society from the hypothetical failings of an individual editor, while also creating a collective authority that protected individual officers of the Society from criticism.

The Society's editorial processes also distributed workload. Listing the tasks involved helps us to consider who did what (see Figure 2). In turn, that will help us to see how the expectations of "a journal editor" changed from the late nineteenth century to the late twentieth century.

Figure 2: editorial tasks at the Royal Society

One set of tasks relates to the economic aspects of running a journal. Judging from what we know of independent journals, financial management was not necessarily part of the editor's remit. Editors who owned their journals often entered into some form of arrangement with a printer-publisher to whose expertise the business side of things could be delegated; and some editors worked for publishers, who managed the business aspects. The Royal Society, however, was its own publisher: it made its own arrangements with paper merchants, engravers and lithographers, and printer. Thus, in principle, the secretary to the Society might actually be more aware of the economic details of journal publishing than those supposedly "commercial" editors whose business was managed by a publisher.

That said, the financial management of the journals did not take up much time for George Stokes, and these tasks were unlikely to be at the top of the list when he thought of his "editorial" work. The Society funded its journals as a service to scholarship, rather than seeking to make them profitable, which meant that its approach to the economics of production and distribution differed from that of independent journals.¹⁸ Negotiating with printers was not something that the Society did very often: it preferred to establish long-term relationships with its printers – Taylor & Francis (1828-77) and Harrison & Sons (1877-1936) – and trust them to manage the costs. Arrangements for the supply of paper, and for the creation of artwork, was managed by the Society, but seems to have been done on an *ad hoc* basis by the Society's staff. There was next to no attention to sales or marketing in

¹⁸ (Fyfe, 2015).

the nineteenth century: the distribution of free and exchange copies was managed by the staff, and copies could be bought either from the Society's premises or from the printer.

The senior employee at this time was designated the "Assistant Secretary", and since the secretary's role involved overseeing the publications, it was part of the assistant secretary's role to help him. It is clear from the surviving minutes and correspondence that Walter White, who held the position from 1861 to 1885, organised the production of art-work and the purchase of paper. He also communicated with the printers about production schedules, the correction of proofs and the appropriate retail price for the volumes. In other words, while Stokes was involved in the important, but rare, strategic decisions about production or distribution, he delegated most of the day-to-day work to his paid assistant. As he bluntly told a disgruntled correspondent, "I need hardly say that it does not form part of the duties of the secretary of the Royal Society... to look over the shoulders of a bookbinder's assistant as he is doing his work lest he should make some mistake."¹⁹

The work that Stokes was most closely involved with was that associated with authors and referees (the second and third areas in Figure 2). His correspondence with authors often began before papers were formally submitted, with Stokes explaining to authors – particularly those who were not fellows – how the Society's processes worked. Later, he would inform authors of the decision. He sometimes conveyed instructions to delete sections or images, paying some attention to the treasurers' fears of rising costs of publication. To some authors – often those close to his own field – he might make suggestions for revisions to improve the paper, though such suggestions were rarely binding.²⁰ In later years, he would imply that his efforts at improving papers by fellow physicists had been a personal choice, claiming that "It is of course no part of my duty as Secretary of the Royal Society to revise, or attempt to revise, papers that the authors send in."²¹

A large amount of Stokes's editorial workload was a consequence of the practice of consulting referees. Stokes chose the referees, drawing upon his extensive knowledge of the interests and expertise of the fellows of the Royal Society. He requested them to read and report on a paper, and then had to read the reports and decide what action to take as a result: whether to recommend acceptance, whether to seek a further opinion, or whether to risk offending the fellow responsible for the paper (as author or communicator) by recommending they withdraw it from consideration. For each paper, going through this process could take two or three months, or more. How much of

¹⁹ Stokes to Richard Owen, 1 Nov. 1884, quoted in (Larmor, 1907), vol. I, p.224.

²⁰ (Baldwin, 2014b); (Gooday, forthcoming).

²¹ Stokes to 'an author', 2 May 1882, quoted in (Larmor, 1907), vol. I, p.223. Compare with (Baldwin, 2014b).

Stokes's time it took is more difficult to estimate: he usually spent one day a week at the Society, but also took Society work home to Cambridge.²²

Stokes did not manage the review process entirely by himself: many of the routine tasks (such as logging the receipt of new submissions) were delegated to the assistant secretary, and he could draw upon the advice of other fellows in selecting referees. Stokes worked with several co-secretaries during his tenure, each of whom had expertise in the life sciences rather than physical sciences, and were therefore a valuable source of advice for choosing referees in those areas. Once suitable referees had been identified, a standard letter requesting a report was usually sent by the assistant secretary, on behalf of the secretaries.

As the number of submissions grew through the late nineteenth century, the amount of paperwork involved in dealing with authors and referees grew. Many of Stokes's correspondents were glad when he became an early adopter of the typewriter in the late 1870s, but the real time-saver was the introduction of standard printed letters and forms. By the 1880s, the effort involved in requesting a report from a referee had been reduced to that of entering the paper's details on a printed letter, signing and posting it (see Figure 3a). By the late 1890s, the printed guidance for referees was transformed into a form with blank spaces for answers: having a standard layout helped the editorial team process the reports (see Figure 3b). For instance, rather than being included in an extended narrative letter, the referee's overall recommendation could now be consistently found towards the top of the page, in answer to Q.1.

Figure 3 Standardised, printed paperwork: a) request for a referee's report, 16 Feb. 1883 (RS RR/9/17); b) referee report form, 2 March 1898 (RS RR/14/56)

The final set of tasks listed in Figure 2 relate to the strategy of the journal: determining its format and contents, and raising its profile among researchers to encourage a steady flow both of submissions and of readers (or purchasers). As we will see, these would come to be seen as an important part of the editorial role in the later twentieth century, but they do not appear to have been conscious elements of Stokes's role in the nineteenth century. This is because the format of the *Transactions* was already well-established; the prestige of the Royal Society meant that there was no worry about insufficient papers being submitted; and the Society's officers took the existence of readers for granted. It is significant, therefore, that when Henry Armstrong suggested appointing an

²² On the 'Royal Society Thursday' in the Stokes household, see (Larmor, 1907), vol. I, PAGE

editor in 1902, he specifically referred to the needs of the *Proceedings*, the Society's newer journal, whose role was still evolving.

For George Stokes, being "editor" was largely a matter of overseeing and organising the people and processes that enabled the Society to make decisions about the intellectual merits of the papers submitted to it for publication. He had substantial ability to steer those decisions, but not the authority to make them. He had some involvement in the financial management of the Society's journals, but this was mostly a matter for the treasurer and the finance committee. It is possible that his own reputation, and his extensive networks, helped to encourage the flow of submissions or to build the prestige of the journals, but that was far less significant than the name, status and networks of the Royal Society itself.

Why did Armstrong want an Editor?

The decades around 1900 were a period of reorganisation and modernisation for the Royal Society, made necessary (and possible) by a change-over in senior management. The secretaries who replaced George Stokes were of a different generation, served shorter terms, and had to fit their secretarial duties alongside new expectations of university academics. The expanding workloads of Royal Society secretaries were the context for all discussions about editorial duties in the twentieth century. The reforms were driven by the appointment (in 1896) of a new assistant secretary, Robert Harrison, who set out to modernise the Society's administration with everything from new procedures to typewriters and electric lighting.²³

At the same time, *Proceedings* was changing its role. It had originally been an auxiliary journal to *Transactions*, publishing reports from the Society's meetings and short accounts of papers not deemed worthy of full publication in the *Transactions*. But by the 1890s, the mid-sized article, of 15-24 pages, in the *Proceedings* had become the typical sort of paper published by the Royal Society, although long and well-illustrated papers continued to appear in *Transactions*. The faster periodicity of *Proceedings* (roughly monthly) made it attractive to authors concerned about establishing priority, especially in competitive, international research areas.²⁴

It was in this context that, in November 1902, Henry Armstrong suggested the appointment of an editor. Armstrong (FRS 1876) was an educational reformer and professor of chemistry at the Central Institution at South Kensington.²⁵ He was closely involved in the Chemical Society, serving on

²³ ("P. D. R.", 1946).

²⁴ (Baldwin, 2014a).

²⁵ (Brock, 1973).

its Council and for a term as president in the 1890s; he knew its editorial model, and probably also that of William Crookes's *Chemical News*. In the closing days of his term as vice-president of the Royal Society in 1901-1902, he delivered a substantial memorandum reacting to a report reviewing the "organisational" aspects of the Society.

Armstrong was concerned about the status of the Royal Society in an age of multiple specialist societies, and of its publications amidst a plethora of alternative publication options. He feared that the Society was "in no slight danger of losing its position as the most important body in this country engaged in the promotion of Natural Knowledge". He claimed that the Society was not showing leadership: "at present, it follows, but it does not lead". One reason for this was that, despite recent organisational reforms, he felt that the Society was becoming too bureaucratic, and Council simply did not have the time to consider "questions of broad policy".²⁶

Armstrong's critique included the Society's publications, for (he alleged) the published papers "do not represent the high-water mark in all branches of science" and, despite the established processes of editorial scrutiny, many "are somewhat trivial in character". He believed that, despite continued growth of submissions, the Society was not receiving the most interesting or significant new work, because "many authors prefer to publish through other channels".²⁷ Armstrong had three suggestions:

- Regularise the issue of *Proceedings*, so that it appeared on a definite date each month (or fortnight);
- Appoint an editor;
- Reduce the use of referees, so that they would only be used for papers "deemed very weak or undesirable".²⁸

The periodicity of *Proceedings* was a matter of long-standing complaint: since it originated as a record of the meetings of the Society, it appeared only in those months of the year when the Society had meetings (roughly, November to June); and it appeared when it was ready, not on a specific date each month.

Armstrong's other two suggestions were intended to reduce "the complexity" of the editorial process. He pointed out that the 1896 reforms had done little to streamline the editorial process: by adding sectional committees as well as referees, "the machinery of publication has... been complicated rather than simplified". He wanted to place more power in the hands of individuals (ideally an editor, but failing that, the secretaries) by reducing the involvement of the sectional

²⁶ 6 Nov. 1902, RS CMP/8.

²⁷ 6 Nov. 1902, RS CMP/8.

²⁸ 6 Nov. 1902, RS CMP/8.

committees and referees. Armstrong believed that an editor “conversant with the general trend of scientific enquiry” could make decisions more efficiently than could committees and referees. Being “conversant” with research would be far more of a challenge for a potential editor of *Proceedings*, since – unlike most editor-run journals – it covered the full range of natural sciences. Armstrong acknowledged this in his suggestion that, although the sectional committees should be better utilised for purposes other than evaluating publications, their chairmen (as representatives of different areas of scientific endeavour) could be useful “advisors or assessors” to the editor (or secretaries).²⁹ This was, in fact, broadly what happened.

It says much about Armstrong’s concept of “editor” that he presented it as an alternative to using referees: he was imagining the editor of *Chemical News* or *Nature*, not the modern academic editor who consults with referees. The use (or not) of referees was central to Armstrong’s argument. He described the use of two referees as “the old plan”, and “an anachronism in the majority of cases”. He had two broad sets of arguments against the use of referees: the failure of confidentiality; and the difficulty of finding appropriate referees.

Ever since the Society began using referees, disgruntled authors had from time to time complained about “secret” judgments,³⁰ but Armstrong’s complaint was not about the legitimacy of such judgments, but about poor confidentiality: “sooner or later, in some occult manner, it usually leaks out who has been the referee, and too frequently ill-feeling is engendered”.³¹ This was something that the Society would formally address in 1914, when its revised standing orders explicitly stated that “The opinion of the referee shall be regarded as confidential by the society”, a phrasing that presumably included the identity of the referee.³²

Finding sufficient, appropriate fellows to act as referees was becoming more challenging because the size of the fellowship was not growing with the scientific community. As Armstrong pointed out, this meant that the “number of persons to whom papers can be referred is very limited”. Furthermore, busy academics were not always willing to accept requests to referee, particularly if they felt that their “valuable time” was being “practically wasted on such work”, and might have been better spent doing their own research.³³ And if appropriately-qualified fellows were not willing, then was it any better to refer a paper to another fellow than to rely on the expertise of the secretary himself? Armstrong’s suggestion that referees be used only cases already “deemed very weak or

²⁹ 6 Nov. 1902, RS CMP/8.

³⁰ (Csiszar, 2018), 152-54.

³¹ 6 Nov. 1902, RS CMP/8.

³² Standing Order 50, agreed 21 May 1914, RS CMP/10.

³³ 6 Nov. 1902, RS CMP/8.

undesirable” implies that he saw referees as useful only for confirming those decisions, and their role was not so much evaluation as protecting the secretaries from direct blame by disgruntled authors or their communicators.³⁴

Reducing the use of refereeing would have speeded up publication times. In the 1890s, decisions on papers for *Proceedings* (mostly made without referees) took 35 to 40 days on average, while those for *Transactions* (which always involved referees) were taking 80 to 110 days on average.³⁵ This suggests that refereeing added seven to ten weeks to the decision-making process. (In hindsight, this seems quite respectable for a process that involved sending the single copy of a manuscript through the postal service to the first referee, back to London, to the second referee, and back to London again!) This was not, however, used by Armstrong as one of his arguments against refereeing.

Armstrong was particularly concerned with the state of *Proceedings*. He hoped that an editor, by acting “in concert with the officers, and loyally supported by them, might easily, in a year or two, make the Proceedings the most important publication of its kind”.³⁶ This reveals that his vision of an editor was grander than just making the editorial process more efficient: after all, *Proceedings* already had a simpler editorial process than *Transactions*, as the secretaries already had significant “freedom of action” for short papers.³⁷ Armstrong seems to have seen the editor as someone who would actively shape the direction of the journal, who might determine its role and remit, and help to raise its profile.

As things turned out, Armstrong’s memorandum had little direct success. It disappeared into a succession of committees. In 1904, one of those committees considered “suggestions relating to the publications of the society”; it looked at the form of both *Transactions* and *Proceedings*, as well as their relationship, and “with a view to rendering it [*Proceedings*] a more effective publishing medium”.³⁸ This suggests that Armstrong’s concerns were not without some foundation. However, appointing an Editor was not among the proposals discussed

The most significant change that arose out of these discussions was the decision to split *Proceedings*, just as *Transactions* was already divided into series A for physical and mathematical sciences, and series B for biological sciences. In 1927, Ernest Rutherford, as president of the society,

³⁴ 6 Nov. 1902, RS CMP/8.

³⁵ Based on our analysis of the “Register of Papers”, RS MS/622.

³⁶ 6 Nov. 1902, RS CMP/8.

³⁷ ‘Explanatory notes on the procedure relating to the reading and publication of papers’, in *Year Book* (1899), 86-89, at p.89.

³⁸ First committee appointed, 27 Nov. 1902; reported 28 May 1903, in RS CMP/8. Quotation from RS CMP/8, 30 Apr. 1903. That committee was reappointed on 21 Jan. 1904, RS CMP/9.

claimed that “Anyone who reads our ‘Proceedings’ cannot fail to be impressed in general by the great variety and importance of the papers appearing in them.” This was, however, more true of *Proceedings A* than *B*, with Rutherford claiming the Society was “now the most important medium of publication of papers in Experimental and Theoretical Physics and Physical Chemistry in this country”.³⁹ The success of *Proceedings A* demonstrates that Arthur Schuster (secretary 1912-1919) and James Jeans (secretary 1919-1929) proved able to develop the journal within the Society’s existing editorial structures. On the other hand, the absence of a similarly triumphal development of *Proceedings B* suggests that those structures did not necessarily work well across the board.

George Stokes had managed all the Society’s editorial work, seeking assistance from his biological colleague when necessary, but the division of both Society periodicals meant that subsequent secretaries came to be seen as *de facto* editors of the A and B side publications. This was an addition to the responsibilities of the secretary dealing with external affairs (who had usually played a minor role in editorial work), and a reduction in those of the secretary dealing with internal matters. As it happened, the Society’s biological secretaries, John Bradford (1908-1915) and William Hardy (1915-25), continued to focus on the Society’s external relations.

From the end of the Great War onwards, the Society received significantly more papers in physics, chemistry and mathematics than it did in botany, zoology or physiology: for instance, in 1927, there were 77 submissions in the biological sciences compared to 201 in the physical sciences.⁴⁰ It is far from clear why this happened. It might reflect the growth of modern physics, but there were major discoveries in physiology and biochemistry in this period as well. Or it may be that Schuster and Jeans were more willing to devote significant energy to developing *Proceedings A* than Bradford and Hardy were with *Proceedings B*. Or they may have been more effective (either personally or by reputation) at encouraging researchers in their fields to submit papers to the Society.⁴¹ For *Proceedings B*, Armstrong may have been right that appointing a fellow specifically to act as editor would have been a good idea.

³⁹ [E. Rutherford], ‘Address of the President, 1927’, *ProcA* (1928) **117**, p.305. On Jeans and *Proceedings*, see (Clarke, 2015).

⁴⁰ ‘Submission rates1919_2018.xls’

⁴¹ Schuster was a retired professor (Manchester); Jeans was a professor (Cambridge); Hardy was only a lecturer (Cambridge), but he spent the war and post-war period intimately involved in directing government research programmes in nutrition and agriculture. His research networks were presumably different from those of Jeans.

A Multiplication of Editorial Roles

Henry Armstrong did not succeed in having an editor (or editors) appointed, and the Royal Society actually extended its use of refereeing rather than reducing it.⁴² However, over the course of the twentieth century, the Society did create several types of designated editorial roles, before finally appointing individual journal editors. The assistant editor was a paid staff member, helping with the routine paperwork and correspondence; the associate editors were volunteer fellows, helping with the selection of referees; while the editors would be fellows paid a modest honorarium to oversee the procedures, decide strategy and act as a figurehead for the journals. Examining the emergence of these roles reveals how the array of tasks undertaken by George Stokes were reconfigured and redistributed during the twentieth century.

Assistant Editor

In 1937, the Royal Society appointed an “Assistant Editor”, and Ronald Winckworth (1884-1950) thus became the first person in the Society’s history to have a formal title as “editor”. Yet Winckworth was not a fellow of the Society: he was one of its staff. The (honorary) secretaries continued to have overall responsibility for the content and direction of the *Proceedings* and *Transactions*, but now the assistant secretary could delegate his publications-related workload to a new member of senior staff. The appointment of an assistant editor marks a recognition of the growth of routine paperwork associated with the *Proceedings* and *Transactions*, and of the value of having the publications overseen by someone who was not simultaneously trying to administer all the Society’s other activities.

At the time of his appointment as Assistant Editor, Winckworth had already been working at the Society for twelve years. A former school-teacher, he joined the Society’s library in the late 1920s, where staff were expected to help with the publications. While the assistant secretary continued to handle the refereeing process, Winckworth became “masterly” at preparing manuscripts for publication, and learned to be a “painstaking proof reader”.⁴³ When the assistant secretary unexpectedly died in 1932, Winckworth was promoted, and discovered the extent of the administrative burden it involved. To ensure that the publications were not neglected, he created the role of “Publications Clerk”, held by William Diamond from 1932. However, Winckworth found himself “irked by the routine of administration” in the assistant secretary role, and when Diamond left the Society in 1937, Winckworth argued that the assistant secretary role should be split – thus allowing

⁴² (Fyfe et al., forthcoming).

⁴³ (Davies, 1951), 295.

him to return to focusing on the publications as assistant editor, while someone else was appointed for the Society's administrative business.

Winckworth's new editorial team included J.C. "Jock" Graddon (formerly of the library staff) and at least one secretary, possibly Jean Lamb.⁴⁴ Together, they managed the refereeing process, corresponded with authors, did the copy-editing and proof-checking, and liaised with the printers, lithographers and paper merchants. This is the origin of the Royal Society's professional publishing team that, by the 1990s, would involve over a hundred people in roles ranging from copy-editor to marketing manager. Back in the 1930s, however, none of these people had any background in publishing: Winckworth was an Oxford history graduate who had become a keen collector of molluscs and echinoderms during his wartime naval service; Diamond had completed a PhD after his war service and then worked in the civil service before joining the Society; and Graddon was a science graduate who had previously worked for Cable & Wireless.⁴⁵

As staff of the Society, rather than fellows, they could do a considerable amount of work on the publications, but they did not have responsibility for the editorial decisions. That still formally rested with Council, but was usually performed by the secretaries, except when papers were to be declined. The choice of referees, the receipt and interpretation of referee reports, and communicating decisions to authors all remained with the secretaries, with advice from the sectional committee chairs. When the Society's publishing processes were reviewed by an experienced publisher in 1955, he reported himself astonished to see so much "slogging clerical work" being done by "professors and scientists".⁴⁶ Nonetheless, the idea of splitting off the editorial side of the secretarial role – along the same lines as had been done for assistant secretary and assistant editor – gained no traction until the 1980s.

Associate Editors

In December 1968, the Royal Society decided to appoint twenty-four of its Fellows as "Associate Editors". This was part of a package of reforms resulting from proposals put forward by the then-secretaries to revise the "policy and procedures" for *Transactions* and *Proceedings*. The impetus had been the appointment of applied mathematician James Lighthill as Physical Secretary in 1965. Within eighteen months, he had enough ideas for reform to fill a ten page document. Lighthill wanted to find a clearer mission for the Society's journals amidst the proliferation of scientific journals in the early Cold War, but, while his secretarial colleague, the experimental pathologist Ashley Miles, agreed

⁴⁴ Lamb was certainly Winckworth's secretary later, and she went on to work for Graddon after the war.

⁴⁵ (Davies, 1951); (*Comrades of Old: Royal Society Staff Pensioners, Biographical Sketches*, 2015).

⁴⁶ Lusty Report, quoted in (Morley, 1963), 1-2.

on the need for change, he had a different vision; and so no significant changes were made to policy. On the other hand, both secretaries agreed that the editorial procedures were “cumbersome and, to some extent, outmoded”.⁴⁷

Like Armstrong six decades earlier, Lighthill and Miles wanted to change the role of the sectional committees and their chairmen in the editorial process – but for different reasons. Lighthill complained that the current system “seems to assume that the Physical Secretary is a sort of scientific Pooh Bah, knowing all the ‘A’ side sciences and everyone in them; and that the five Sectional Committee Chairmen can field all the mistakes he may make. Neither assumption is justified.” Lighthill believed that even six people could not hope to have “personal, and preferably up-to-date, knowledge of [every] field and those working in it”.⁴⁸ The expansion of scientific research in the Cold War, both in terms of specialisation and internationalisation, meant that the Royal Society itself might not include fellows with appropriate expertise to referee every possible paper, so the 1968 reforms would allow the secretaries to look beyond the fellowship for referees, and that would make it more important than ever for the secretaries to have a way of identifying appropriate referees.

Lighthill noted that personal networks mattered for more than referee selection. He had discovered that the reports he received from fellows were “seldom... clear-cut”, and those with editorial responsibility needed to check closely for “some unintentional clue” that might reveal a bias that would lead a recommendation to be “treated with caution”. This would be even more necessary once the pool of referees was widened. Again, “knowledge of the field and the personalities involved helps enormously”.⁴⁹

Both secretaries felt that the sectional committees (and their chairs) were not the right bodies to assist with the selection of referees and the consideration of their reports. Lighthill suggested that each secretary needed about twelve “helpers”, while his colleague Ashley Miles had a similar idea involving the creation of an Editorial Board to help each Secretary. The point was to have a larger group of fellows to draw upon; and also to have a group whose remit was specifically focused upon the needs of the *Proceedings* and *Transactions*. From December 1968, the sectional committees ceased to be involved in editorial work; and twenty-four Fellows were appointed as “Associate

⁴⁷ ‘Proposed Future Policy and Procedures for Royal Society *Philosophical Transactions* and *Proceedings*’ [For Council on 15 June 1967], in RS C/84(67).

⁴⁸ [James Lighthill], ‘Possible Changes in arrangements relating to *Proceedings* and *Transactions*’, 7 June 1967, p.9, in RS C/84(67).

⁴⁹ [James Lighthill], ‘Possible Changes in arrangements relating to *Proceedings* and *Transactions*’, 7 June 1967, p.9, in RS C/84(67).

Editors”, to assist with “referee selection and evaluation” and generally to support the interests of the journals.⁵⁰

The 1968 reforms would also give the secretaries greater individual responsibility for editorial decisions. Since the mid-eighteenth century, collective, or committee-based, decision-making had been fundamental to the Society’s editorial processes: just as the workload was distributed, so too the responsibility had been shared (among fellows, but not staff). In theory, since 1896, all recommendations made by the secretaries had to be approved by the relevant Sectional Committee and by Council. In reality, for straightforward decisions to publish, those ratifications had become automatic and after-the-fact. But decisions regarding problematic papers usually did go to the committees, and could take weeks or months to finalise. Lighthill and Miles both wanted “increased powers” for the secretaries.⁵¹ Council agreed. Henceforth, the secretaries were empowered to reject papers on their own authority; and decisions to accept papers could be made by Associate Editors, subject to automatic ratification by the relevant secretary.⁵² Removing the role of committees gave the secretaries decision-making power similar to those of independent editors. Indeed, by this time the secretaries were informally referred to as “editors”, although they continued to fulfil those roles alongside all their other responsibilities to the Society.

Editors

The question remained of how effectively the Society’s journals could be run by secretaries who were also overseeing the Society’s correspondence, conferences, grants, policy work and international scientific diplomacy. One of the implicit expectations of Henry Armstrong’s suggestion for an editor had been that a dedicated editor would be able to devote time and energy to developing and promoting the journals. In 1983, the Associate Editors made a proposal to Council that there should be an “experiment” with “the formal delegation of editorial responsibilities... [from the secretaries] to two Editors”.⁵³ The timing was auspicious, because up until that year, the Society’s editorial department had been run by assistant editors whose ideas about journal editing had been formed in the 1930s and 1940s. Now, there was a new assistant editor, who had “only” been with the Society since 1977.

⁵⁰ Council minutes, 15 June 1967, RS CMP/22. See also RS CMP/23, 9 May 1968; and ‘Notes for the Guidance of Associate Editors’ [undated 1969], SHELFMARK?

⁵¹ CHECK which part of C/84(67)

⁵² ‘Notes for the Guidance of Associate Editors’ [undated 1969], SHELFMARK?

⁵³ Annual Report (1983), p.10. RS CMP/??, 14 July 1983. (Rowlinson & Robinson, 1992), p.108.

In early autumn 1983, the quantum physicist Paul Matthews (FRS 1963) and the zoologist Brian Boycott (FRS 1971) became “acting editors” for the series A and series B journals, respectively. Their division of labour shadowed that of the secretaries, and they each took responsibility for a series of *Proceedings* and *Transactions*. A year later, the experiment was declared “most successful”, and Council began drafting the new procedures necessary “to put this arrangement on to a permanent basis”, with five-year editorial terms.⁵⁴ In fact, the B-side editing returned to the Biological Secretary a few years later,, but the A-side journals did continue with a separate editor.⁵⁵ The discussions surrounding this “experiment” again shed light on notions of what an “editor” might do.

One of the things that the acting editors apparently managed to do was to improve “the steady flow of papers through the processes up to acceptance”. Since Boycott estimated that he had only spent two to three hours work per fortnight on editorial work, this suggests that the time the secretaries had previously been able to devote to the journals might have been extremely modest.⁵⁶ Boycott’s editorial experience fired him with enthusiasm for other things that editors could do. Barely six months into his role, he had ambitions for the journals “to go more entrepreneurial”. He wanted to “increase sales, publish more and better papers and increase the rejection rate”.⁵⁷ Boycott suggested that the editors should be “named on the journal covers”, so that they would “take responsibility for making decisions”.⁵⁸ Boycott’s vision of an editor, in other words, was not merely someone who managed the editorial processes for the Society, but someone who would publicly set the policy, direction and tone of the journal.

Boycott himself did not continue as an editor for the Society after 1984, but by 1987, these ideas were starting to gain traction. Ongoing concerns about the falling number of subscriptions (and lack of growth in submissions) for the journals stimulated a formal review of the Society’s practice and policy on publications. One of the particular motivations of the 1987 review group was that “there had been fuzzy lines between journals, and no one understood the differences”⁵⁹ As the appointment of editors in 1983 had illustrated, the Society still thought of its publications in terms of the A and B series (reflecting the remit of the two secretaries), rather than as four separate journals: *Transactions A*, *Proceedings A*, *Transactions B*, and *Proceedings B*. The difference between Series A and Series B was clear enough, but what really distinguished *Proceedings* from *Transactions*? The review group

⁵⁴ Annual Report (1984), p.10 and 16-17.

⁵⁵ See the pages ‘Editors and Associate Editors’ in the Year Books for 1986-89. JT Stuart covered the A-side editorial work in 1987, and Frank Smith took over in 1988.

⁵⁶ ‘Ad hoc meeting on RS publications policy, 25 May 1984’, report dated 2 July 1984, in RS C/155(84).

⁵⁷ ‘Ad hoc meeting on RS publications policy, 25 May 1984’, report dated 2 July 1984, in RS C/155(84).

⁵⁸ ‘Ad hoc meeting on RS publications policy, 25 May 1984’, report dated 2 July 1984, in RS C/155(84).

⁵⁹ Interview with Peter Cooper, 3 June 2016

made many recommendations but one of the most significant was the journals would henceforth be edited, managed and marketed as four separate titles. At an organisational level, this involved appointing four “committed and enthusiastic” fellows as editors, each assisted by an “effective” editorial board (replacing the A and B groups of Associate Editors).⁶⁰ The new editors would have day-to-day control and substantial independence: they would meet collectively in a new Publications Management Committee, but they did not have to get their editorial decisions passed by that committee, nor by sectional committees nor by Council.

John Enderby (*Proceedings A*), Bryan Clarke (*Proceedings B*), Frank Smith (*Transactions A*) and Quentin Bone (*Transactions B*) were appointed as the first editors of specific journals in late 1988.⁶¹ The importance of strategic thinking in their new roles was immediately apparent, as, after choosing the members of their new editorial boards, their first task was to prepare their journals for a high-profile re-launch in June 1990. The aim was for each journal to have “a more distinct and clearly defined character”, and this included its appearance as well as its contents. The “tradition that the four journals should all be of similar design” would be broken, and it was up to the new editors to decide what types of articles their journals should carry, and what size and format they should be.⁶² The re-launch was swiftly declared highly successful. Submissions rose. And the effect was particularly dramatic in the life sciences, where submissions soared and overtook those from the physical sciences for the first time in a century. For *Proceedings B*, having an editor appeared to help a great deal.

Conclusion

The editorial roles that the four appointees in 1988 were expected to fill had some similarities to the role performed by Stokes, but also many differences. The late modern editors had direct decision-making authority and were not constrained by committees, but they still did not make decisions alone: the ongoing use of referees might have surprised Henry Armstrong. Editorial responsibility continued to be distributed between editor, editorial board, and referees. There was, however, a lot more paid help, and new electronic technologies would shortly make it possible to work with a more internationally diverse pool of referees.

⁶⁰ Minutes of PPC2, 21 Dec. 1987, in RS CMB/328b; Publications Review, 1988 / Summary of Conclusions’ reproduced in file at RS C/31(95).

⁶¹ Strictly, *Notes and Records of the Royal Society* had had a named editor ever since it was created in 1938, but it was initially a members’ news magazine and latterly a history of science journal, rather than a scientific research journal.

⁶² ‘The Society’s Publications’, 11 June 1987, p.8-9, in RS C/87(87); ‘Publications Review, 1988 / Summary of Conclusions’ reproduced in file at RS C/31(95).

A key change for the Royal Society's journals – and thus for their editors – was the competitive landscape in which the *Transactions* and *Proceedings* now operated. In the late nineteenth and early twentieth centuries, there had been no need to solicit more submissions: those submissions were driven by the Society's reputation and the prestige of being published in its *Transactions*. By the 1950s, this could no longer be taken for granted, and the idea re-emerged of appointing someone who would take on a more pro-active, public role in shaping and promoting the journal. One fellow put forward an early proposal for a "Board of Editors", whose names should appear on the journal; this, he hoped, would encourage more fellows to take an active interest in "the welfare of the journal".⁶³ The editors appointed in 1988 were definitely intended to take a strategic role in shaping their journals, and to do so in a way that would encourage submissions.

The changing landscape of academic publishing also affected the way the journals were distributed. In the days of Stokes and Armstrong, most of the copies of the journals that went to academic and learned institutions were distributed non-commercially, through gift and exchange. From the 1950s onwards, they increasingly did so by sales, as libraries paid for subscriptions. This meant that the Royal Society's publishing department in the later twentieth century was far more aware of the need to produce a product that libraries would pay to acquire. This had not been a concern at all in earlier generations. But it was, however, largely a concern of the paid staff, particularly those in the sales and marketing department (created in 1955). For the associate editors, and after them, the journal editors, their existing aim of publishing high quality science was assumed to translate to sales.

The different histories of *Proceedings A and B* in the twentieth century suggest that Henry Armstrong was partially right about the advantages of an editor, though not necessarily for the reasons he identified. *Proceedings A* shows that a devoted secretary could do a good job of running a journal; but *Proceedings B* suggests that it depended a lot on the personality and other commitments of the secretary. One simple but important difference between an "editor" for the Society's journals, and having the journals managed by the "secretary", was the focus and attention that the journals would receive; this was clearly demonstrated in the 1980s, even though it had been found true at the staff level in the 1930s.

Examining the Royal Society's processes reminds us that editing a journal could be done without an "editor", but also that editorial work and responsibility at scientific journals is shared

⁶³ R.A. McCance, 'Memorandum on the Proceedings of the Royal Society, Series B', Feb. 1954, in RS Council Papers C/20(54).

between many other people. Developments over the twentieth century have enabled more of the work to be delegated to paid staff or technology, but responsibility for academic decisions continues to lie with academic, voluntary editors, board members and referees. George Stokes's editorial role was as an organiser, and as a recommender. His modern successors can decide, rather than recommend; and they have staff to do most of the organising. And, in a world where journals must compete for authors and for library budgets, strategy, vision and journal promotion have become far more prominent parts of the editorial role.

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