

# Science, the 1930s and the BBC: competition and collaboration

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## **Abstract**

The ‘social relations of science’ movement grew to prominence in the 1930s. Its story has been told by McGucken (1984), MacLeod and MacLeod (1976), and Werskey (1978) among others. The movement consisted of predominantly left-wing scientists who held that science could and should be applied to the alleviation of social problems, and that a rationally planned society was more just, and more efficient, than one operating on *laissez-faire* principles. In their view, the potential of science for social improvement was being frustrated by reactionary and vested interests. Part of their mission was to educate the public in science and rational thought. Mass media such as radio were attractive for this function.

This paper looks at the social relations of science movement in relation to science broadcasting on the BBC during the 1930s. During the first half of the 1930s, several ‘science and society’ broadcasts were given on BBC radio, often by scientists associated with the social relations of science movement, such as physicist Patrick Blackett and mathematician Hyman Levy. These talks will be outlined, as will the BBC’s ‘Changing World’ series of broadcasts which were a direct consequence of the economic crisis of 1930/31.

The paper argues that despite the known liberal sympathies of many of the BBC Talks staff during the early 1930s, ‘science and society’ talks were regarded by them, and especially by science producer Mary Adams, with suspicion. This was not so much because these talks presented controversial politics (although there was an element of that), but because they were regarded as ‘poor radio’. The paper argues that BBC production staff used criteria for assessing broadcasts based on their own developing sense of the professionalism of public service broadcasting. The profession of broadcasting embodied, in the view of BBC staff, the distinct skill of knowing what

the audience could cope with and how best to present it. This skill was the exclusive preserve of the professional broadcaster.

## Introduction

In view of the BBC's diverse broadcasting output, evidenced from even the earliest days of the organisation, concentrating on any special part of it calls for justification, especially if, as is the case with science, authors of major primary and secondary works on British broadcasting barely mention it. In the 230-odd pages of John Reith's 1924 book *Broadcast Over Britain*, only a single sentence refers to the medium's potential for covering science, yet there are chapters on the enormous potential of broadcasting for music, literature, religion, and general education.<sup>1</sup> Early Talks producer Hilda Matheson, in her 1933 book *Broadcasting*,<sup>2</sup> has chapters on literature and drama, music, entertainment, and education, but science, as a broadcasting subject, is confined to a couple of paragraphs on the popularity of astronomy and on listeners' liking for Sir Oliver Lodge.<sup>3</sup>

Scannell and Cardiff, in the preface to volume 1 of *A Social History of Broadcasting*, say that they have omitted coverage of science and literature, concentrating instead on what they identify as the two major issues of the 1930s: unemployment and foreign affairs.<sup>4</sup> Their decision assumes a distinction between science and contemporary affairs that would certainly not have been recognised by many eminent scientists of the 1930s. For them, science was deeply connected with the problems of the decade, such as unemployment and the rise of Nazism. Science, in their view, held the solution to pressing social problems, and the rise of Nazism was viewed as at least partly attributable to prevailing scientific ignorance. A number of these scientists were occasional broadcasters, and advanced their views, sometimes controversially, on the BBC. If any special justification is required for mentioning science broadcasting in this conference, then, it lies here.

A second reason for considering science broadcasting in this decade is the sheer amount put out by the BBC. Quantitatively, science was as significant in the BBC's output as literature or current affairs (but not music, which trumped everything else). In the period 1931/2, scientific talks amounted to one-sixth of adult education output in a season of broadcasts especially devoted to contemporary issues.

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<sup>1</sup> 'Talks on popular lines by eminent scientists, physicists, chemists, astronomers, have already been found eminently acceptable.' (Reith, 1924, p.152)

<sup>2</sup> Matheson (1933).

<sup>3</sup> Matheson (1933), pp. 243–4.

<sup>4</sup> Scannell and Cardiff (1991) *A Social History*, p. xii.

## Social Relations of Science movement

A conviction that, for good and ill, science was deeply implicated in contemporary social issues grew during the 1920s and 30s among many left-leaning British scientists (notably John D. Bernal, John B. S. Haldane, Lancelot Hogben, Hyman Levy, Joseph Needham and Patrick Blackett). A common complaint by these scientists was that science was underutilised for the general good. For example, P. M. S. Blackett said in a radio broadcast (1934), and later in a book (1935):

Industry and science have made such huge advances that a large improvement in the standard of life, particularly of the workers, is now technically and immediately possible.<sup>5</sup>

In a similar vein, J. D. Bernal argued for the political management of science for socially beneficial ends in his 1939 book *The Social Function of Science*.<sup>6</sup>

These scientists, and many others, became associated with the social relations of science movement, initially a trend rather than a formally constituted body. Its origins have been traced to the First World War, and a disenchantment with science that spread widely in the public and, to some extent, among scientists themselves, as the destructive potential of science became evident.<sup>7</sup> The heyday of the social relations of science movement was the 1930s,<sup>8</sup> and many scientists associated with it looked to the USSR as a model of what rationally organised, centrally planned administration could achieve.<sup>9</sup> Conversely, Nazi Germany provided an example of what an anti-scientific spirit could lead to. In 1934, Blackett said:

The National-Socialists have been led by their belief in a racial theory to eject very many of Germany's ablest scientists. [...] And this development is no accident. It is a part only of a larger movement, and the larger movement is essentially anti-scientific.<sup>10</sup>

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<sup>5</sup> Blackett (1935), p.129. This item began life as a BBC radio talk in 1934, and subsequently published as a book chapter.

<sup>6</sup> Bernal (1939); Rouse (1993), p. 60.

<sup>7</sup> MacLeod, R. and MacLeod K. (1976)

<sup>8</sup> McGucken (1984)

<sup>9</sup> Turner (2008), p. 44; Bucchi (2004), p. 15.

<sup>10</sup> Blackett (1935), p.135–6.

For many scientists and commentators associated with this movement, what stood in the way of the proper use of science for social betterment were vested interests and reactionary forces.<sup>11</sup>

Associated with the social relations of science movements was a view that the public needed to be made aware of what science could offer – through popularisation. Popularisation, then, served a vital role in the proper appreciation and use of science. Bernal wrote that if the potential of science for benefitting human welfare were ‘drummed into’ people, the demand for science to be used in this way would become irresistible, to the displeasure of the ‘vested interests of owners and advertisers.’<sup>12</sup> Scientists associated with the movement were inclined to turn to popular media to promote their ideas about the social benefits of science and planning.<sup>13</sup> Popular understanding of science thus became an urgent necessity, and Bernal, in particular, was complimentary about the work the BBC had done.<sup>14</sup>

### **Mary Adams**

During the first half of the 1930s, the BBC’s main science producer was Mary Adams (1898–1984). Her association with the BBC began in the spring of 1928 when, as a 30-year old biologist with experience in adult education, gave a series of six talks on the BBC on *Problems of Heredity*. In 1930 she joined the BBC as an adult education officer.<sup>15</sup> In the same year she gave six talks on *Pioneers of Health* and five eugenically themed talks on *A1 or C3? The Future of the Race*. For the next six years she supervised science broadcasting at the BBC, though appears not to have broadcast again herself. She is the first producer whom we know by name to have been regarded as a specialist science producer.<sup>16</sup> The Adams era was notable for a number of ‘science and society’ broadcasts, often given by politically left-leaning or liberal scientists, some of them associated with the developing Social Relations of Science

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<sup>11</sup> McGucken (1984), p. 3 and Bernal (1939), p.305.

<sup>12</sup> Bernal (1939), p.305.

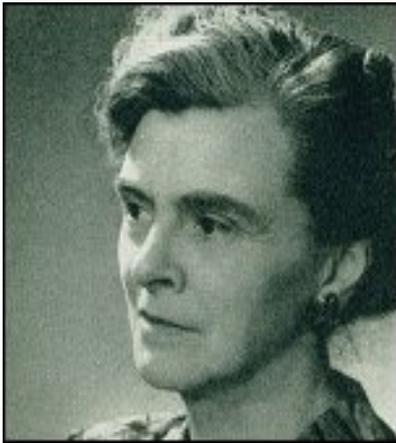
<sup>13</sup> McGucken (1984).

<sup>14</sup> Bernal (1939), p.305.

<sup>15</sup> Adams (2004)

<sup>16</sup> However, it appears there were specialist science producers by about 1928, two years before Adams joined the BBC. The evidence for this comes from a note from Talks producer Hilda Matheson to science journalist J. G. Crowther in 1928 in which Matheson says ‘Regular science talks are not my domain, but I learn from the section responsible for them...’ This suggests that there existed staff with a science specialism within the Talks Department in 1928. BBC Written Archives Centre J. G. Crowther Contributor’s file. Letter from Matheson to Crowther dated 31 February [sic] 1928.

movement, for example mathematician Hyman Levy, biologist Julian Huxley and physicist Patrick Blackett.



Mary Adams, radio science producer in Talks from 1930–6.

At this period, adult education broadcasts were transmitted at prime listening times, such as early evening, and were intended to appeal to all listeners. For more highly motivated listeners, though, additional educational resources were available, specifically a printed syllabus giving additional background to the talks and lists of further reading. Listeners were encouraged to listen as groups, and to discuss the talks afterwards. It was these additional features that really justified the categorisation of these Talks as ‘adult education’. Typically talks given by scientists, literary figures or academic figures themselves, unmediated by interviewers, journalists or interpreters. Julian Huxley, Cyril Burt, James Agate and Harold Nicolson are just a few examples of frequent broadcasters/

### **The Changing World series**

A catalyst for the appearance of the ‘science and society’ type of broadcast was the British economic and political crisis of 1931, with high unemployment, pay cuts in the public sector, the creation of a coalition National Government, and the abandonment of the gold standard for the pound which led to a sharp drop in the pound’s exchange rate (although in the long run this may have helped British economic recovery).

In Autumn 1931 and Spring 1932, Adult Education broadcasts were subsumed under the umbrella title *The Changing World*. The preface to the Talks syllabus explicitly relates the series theme to contemporary developments:

For some time past a sense of crisis has been abroad, which has led many to wonder what can be the outcome of our present troubles. This perplexity goes to the very roots of life, and affects us, not only in the economic and social sphere, but is all-pervasive, setting its seal on art and upon literature,

and upon all expressions of the human spirit. [...] In this programme, an attempt is, therefore, made to face up squarely to the present situation, and to provide a survey of the many changes in outward circumstance, and in the evolution of thought and of values, which have brought into being the world as it is to-day.<sup>17</sup>

One-sixth of the talks in The Changing World series (approximately 17 per cent) were devoted to science. The speakers include left/liberals Hyman Levy and Julian Huxley, but also John Baker, a favourite broadcaster of Adams, who was not sympathetic to the social relations movement. Hyman Levy's broadcasts in the Changing World series were the first he gave for the BBC, and on the strength of them he was invited to collaborate with Julian Huxley on the series *Scientific Research and Social Needs*,<sup>18</sup> transmitted in the autumn of 1933.

It would be wrong to suggest, however, that left-wing scientists dominated the air during the early 1930s, or even that they dominated science broadcasts. The majority of science broadcasts remained uncontroversial, for example the series *Science in the Making* broadcast in 1936, in which various scientists spoke about their working lives as practising scientists.

Unlike scientists associated with the social relations of science, movement, Adams herself appeared sceptical about the progressive values of science. On one occasion she wrote:

‘Scientific progress seems ... to have magnified rather than minimised social instability.’<sup>19</sup>

It's natural to wonder why Adams broadcast any of these ‘science and society’ broadcasts at all, given their potential for controversy. According to Adams, the merit of these broadcasts was that they were widely appreciated by listeners. Unfortunately, from Adams's point of view, the scientists who were good at this sort of broadcast had an axe to grind:

The speaker competent to [discuss the relevance of scientific facts to social affairs] is generally a Marxist & therefore ‘biased’.<sup>20</sup>

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<sup>17</sup> BBC (1931b), pp. 1–2.

<sup>18</sup> Werskey (1978), p.170.

<sup>19</sup> Friday (1974), p.71.

Despite their being appreciated by the listeners, this kind of broadcast was ‘the least satisfactory & difficult to arrange’.<sup>21</sup>

The kinds of science broadcast Adams liked best were talks where factual content was presented attractively by virtue of a novel or entertaining style of presentation, or which engaged the listener in making their own observations. She least liked reflective talks by celebrated scientists (for example James Jeans or Arthur Eddington) who took a philosophical or semi-philosophical look at science. These attracted listeners only because of the speakers’ celebrity and achieved little in terms of scientific understanding.<sup>22</sup>

What emerges, then is a very pragmatic approach. The scientists who believed that science potentially had a special role in the amelioration of social problems were given air time not because Adams thought their message deserved dissemination, but because this type of broadcast ‘worked’ with the listener. Adams, the true professional broadcaster, was not especially interested in making claims for science as a way of resolving social problems, despite herself being a scientist by training. What she sought was broadcasting that ‘worked’ in a broadcaster’s sense.

This tension between the scientists’ aspirations for science promotion – the wish to inculcate a scientific worldview in the population at large – and the broadcaster’s view of science as simply one type of programme material that was more or less interesting depending on how it was handled, became the seed of a conflict that erupted in 1943, and sporadically in decades afterwards, in which scientists argued that science was owed a special place in BBC output because of the special nature of science in modern life. To give a flavour of the kind of justification advanced by scientists for treating science specially on the BBC, here are a couple of quotes from a book published in 1928 by science journalist and occasional broadcaster J. G. Crowther:

‘One of the necessities of the hour is that the public should know more about science.’<sup>23</sup>

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<sup>20</sup> BBC Written Archives Centre R51/523/1, undated memo from Mary Adams to Ian Cox, probably June 1936.

<sup>21</sup> BBC Written Archives Centre R51/523/1, undated memo from Mary Adams to Ian Cox, probably June 1936.

<sup>22</sup> BBC Written Archives Centre R51/523/1, undated memo from Mary Adams to Ian Cox, probably June 1936.

<sup>23</sup> Crowther (1928), p. vii.

‘The public should be made to realize that their own existence is largely the result of the application of science to the old domestic manufacturing arts ...’,<sup>24</sup>

This kind of talk, which sees science as fundamental to modern life, and therefore of special concern to the general public was not at all unusual in the 1920s and 30s (and still isn’t).

However, when it came to science broadcasting on the BBC, the second half of the 1930s was not propitious. Around 1935 there was what Scannell refers to as ‘the wholesale dismantling of the [Talks] department,’ as most of the left/liberal staff departed and were replaced by a more conservative regime.<sup>25</sup> The new administration instituted ‘a marked retreat from dealing with contentious issues in talks programmes’.<sup>26</sup> At around the same time, the fortunes of Adult Education at the BBC took a turn for the worse, and thereafter a decline set in. From the late 1920s the BBC had been supporting adult education activities at local level around the country in the expectation that other adult-education organisations would eventually set up Area Councils to assume responsibility for local activities.<sup>27</sup> Few of these Councils came into existence, leaving the BBC to carry administrative and other costs for local activities<sup>28</sup>. This was a major factor in the curtailing of the BBC’s adult-education activities.<sup>29</sup> This curtailment was especially notable after 1935.

A third strand in the decline of Talks is emblematically represented in a complaint by Member of Parliament Sir Alfred Knox to the Postmaster General in 1935. He lamented the BBC’s neglect of ‘the wants of the ordinary man, who, after a hard day’s work, wants some amusement and not instruction.’<sup>30</sup> The widespread public preference for amusement over instruction was demonstrated from the mid-1930s as the BBC began to face significant commercial competition from foreign stations (primarily Radio Luxembourg) directing commercially sponsored English-language transmissions of popular material at the UK. In response, the BBC increased

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<sup>24</sup> Crowther (1928), p.vii, 235.

<sup>25</sup> Scannell (1980), p. 26

<sup>26</sup> Cardiff and Scannell (1991), p. 69.

<sup>27</sup> Briggs (1995a) pp. 206–7.

<sup>28</sup> Briggs (1995a) pp. 206–7.

<sup>29</sup> Briggs (1995a) pp. 206–7.

<sup>30</sup> Knox (1935).

significantly its expenditure on popular entertainment in the second half of the 1930s, and the format of radio talks became lighter.<sup>31</sup>

## Science after Mary Adams

Under Mary Adams's successor, Ian Cox, 'science and society' type broadcasts virtually disappeared. However, the adult-education type of programme survived, even though 'adult education' as a designated part of the BBC's output had virtually collapsed. It was a style in which scientists addressed listeners directly, rather than via an interviewer, on topics not tied directly to contemporary issues or research developments. It was demonstrated by series such as *What More Do You Want from the Scientist?* (concerning what was and was not scientifically feasible) broadcast in the autumn of 1937, *The Story of the Rocks* (on geology) in the autumn of 1938, as well as individual programmes such as Ambrose Fleming's reflecting, in spring 1938, on *The Early Days of Wireless*, and a pair of programmes in the summer of 1938 on *Science and Gardening*.<sup>32</sup> However, besides maintaining the 'adult education' style, Cox also sought a more topical treatment of science. In the spring of 1939, he produced a series of six broadcasts on *Modern Inventions* which included television, the cyclotron, and recent improvements in internal combustion engines. More significantly, in 1939 he revived regular, topical science programming, which had languished since 1934 following the cessation of Gerald Heard's *This Surprising World* series.<sup>33</sup> Cox's *Science Review* ran fortnightly from 9 January 1939 to 17 March 1939 on the London Regional service. It consisted of a number of short scientific talks, about 8 minutes in length, of current interest. The aim of the programme was to provide first-hand information about scientific developments, and was designed to interest a wide audience with no scientific training.

Meanwhile, as the social relations movement was less represented in BBC schedules, it continued to gain ground institutionally. In 1938, the British Association for the Advancement of Science founded a new Division for Social and International Relations of Science.

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<sup>31</sup> Cardiff (1983); Cardiff (1980), p. 34.

<sup>32</sup> *What More Do You Want from the Scientist?* was broadcast weekly from 15 October to 12 November 1937. *The Story of the Rocks* was broadcast weekly from 10 October 1938 to 2 January 1939. Fleming's *The Early Days of Wireless* was broadcast on 18 May 1938. B. A. Keen's *Science and Gardening* were broadcast on 20 and 27 June 1938.

<sup>33</sup> 1934 saw the cessation of Gerald Heard's topical series on science. This had begun in 1930 under the title *Research and Discovery*, which by 1934 had transformed into *This Surprising World*. Heard's BBC broadcasting career came to an end with his departure for the USA in 1937, where he remained for the rest of his life, becoming a public intellectual, an early proponent of 'alternative' spirituality and mysticism, and a writer of science fiction (Falby, 2004).

The functions of the Division included such activities as arranging meetings and promoting research and publications, and also this:

- (c) To be prepared to act in a consultative capacity and to supply information to organisations, individuals and the public.<sup>34</sup>

That the Division saw its role as in some way servicing the public appetite for science, or even engendering a public appetite for science, opened up a potential area of territorial conflict with the BBC. Whose responsibility was it to address the public directly about science?

In May 1939, a representative of the new Division wrote to Ian Cox suggesting that it would be happy to co-operate with him on devising science programmes later in the year 'if there were any question of putting this [co-operation] on a formal basis'.<sup>35</sup> Ian Cox's response to this suggestion is not known, but it came to nothing because the declaration of war in September 1939 brought normal programming to an end. Cox left for military service, and science broadcasting dropped to a low ebb for a while.

This potential conflict over the control of science broadcasting became actual conflict around 1943, with delegations from the British Association visiting the BBC's Director General to argue that the scientific world should have a greater influence over the BBC's science programmes. This gives a flavour:

The [delegation] wanted to see a man of high scientific attainments, e.g. a man of University professorial status, appointed as the proposed science programme organiser.<sup>36</sup>

The intention here is that the BBC's science broadcasts would at the very least be overseen by a scientist rather than a BBC staff member. The justification was not that present science programmes were bad or inaccurate; rather, that the status of science within the BBC and in its schedules was not sufficiently high given the central importance of science in modern life:

There was a growing general recognition of science as a basis for material and social progress. Scientists did not want science to be regarded as a

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<sup>34</sup> British Association for the Advancement of Science (1939), p. 133.

<sup>35</sup> BBC Written Archives Centre R51/523/2, letter 3 May 1939. This suggestion from the Division for Social and International Relations of Science came in response to a circular letter from Cox to many scientific organisations asking for ideas for items in his topical series *Science Review*.

<sup>36</sup> BBC Written Archives Centre R51/524/4, memo 14 December 1943.

mystery; they wanted it to be understood in its relation to all aspects of life.<sup>37</sup>

BBC history is littered with attempts to compromise its independence, but on the whole these tended to emanate from departments of British Government. I suggest something different was happening with science. During the 1930s, as the BBC became a central institution in the life of ordinary people, there was a realisation by the British Association for the Advancement of Science that some of the BBC's activities were a version what the Association regarded as one of its own primary activities – talking to the lay public about science. The sociologist Andrew Abbott uses the term 'reduction' for the process whereby a new activity is assimilated by a professional group to its existing set of activities.<sup>38</sup> In the case in question, science broadcasting was 'reduced', I suggest, to the activities already engaged in by the British Association, specifically the promotion and popularisation of science. In terms of Gieryn's notion of a pragmatically constructed boundary to science, this was an attempt to redraw the boundary of science to encompass science broadcasting, and to diminish the broadcasters' authority over this kind of programming.<sup>39</sup> Science broadcasting is thus seen as a kind of boundary work.<sup>40</sup>

Abbott also uses the term 'delegation' for the process whereby senior members of a profession assign the more mundane activities to junior staff. In the case of the British Association's attempted reduction of the BBC's work to its own activities, BBC staff were not to be dispensed with, but their province would become one of broadcasting technique:

The most skilled programme devisers and producers should be consulted at all stages as the best methods of presentation, and adequate tuition of scientific speakers should be provided.<sup>41</sup>

The higher level 'gatekeeping' functions of planning broadcasts and commissioning scripts would be assumed by, or approved by, members of the scientific profession.

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<sup>37</sup> BBC Written Archives Centre R51/524/4, memo 14 December 1943.

<sup>38</sup> Abbott (1988), p. 41.

<sup>39</sup> Gieryn (1995), (1999)

<sup>40</sup> Gieryn (1995), p. 405.

<sup>41</sup> McClean (1943), p.303.

The BBC's management resisted these institutional attempts by the scientific world to assume control of its science output. This did not mean, however, that the BBC's science production was isolated from the world of science. In fact, BBC science producers were highly dependent on scientists, and scientists could be highly influential in programme planning. Crucially, though, these relationships were on the BBC's terms, and constructed in a way that did not jeopardise the Corporation's appearance of independence. The classic mechanism for doing this was through 'advice'. Producers of all kinds (not just science) had access to advisors who were not formally BBC employees, but who often were on BBC advisory committees, or had close informal connections with production staff. An interesting example is Gerald Heard, whose name has already been mentioned.

By training Heard was a historian and theologian, but from 1930, he broadcast regularly on topical science matters, first in the fortnightly series *Research and Discovery* and then in *This Surprising World*.<sup>42</sup> The latter series continued to 1934.

Heard was one of Adams's favourite broadcasters. He was also in some respects an adviser to BBC staff, and his comments and suggestions were welcomed. In 1934, for example, Heard, proposed that the psychoanalyst Jung be invited to speak.<sup>43</sup> Another noted advisor was Julian Huxley. Rather as the institutional world of science attended to its boundary, and tried to 're-draw' it to encompass absorb science broadcasting, the BBC attended to its own border and maintained authority over its activities even while being highly dependent on external actors. It did this by making its boundary to some degree permeable. In terms of Kohler's thinking, we should view the BBC as being delineated by a border rather than a boundary.<sup>44</sup> That is, it was a region of transition, characterised by permeability and overlap rather than discontinuity.

## Conclusions

A common allegation against the BBC is that it was (and is) 'anti-science', but the evidence of the 1930s makes this hard to sustain. Science was a significant part of the BBC's Talks output, with a proportion varying in 1930 of 11.5% and 16% in 1931/31.

In the first half of the 1930s, scientists associated with the social relations of science movement occasionally gave broadcasts in which they presented their view of the

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<sup>42</sup> Moseley (1933), pp. 73–4.

<sup>43</sup> BBC Written Archives Centre Gerald Heard contributor file, letter from Heard to Mr Salt, received 28 October 1934.

<sup>44</sup> Kohler (2002), p.12–19.

relationship of science and society:

science offers the solution to social problems

public needs to understand science and scientific thinking

science is being prevented from achieving potential for social good by reactionary elements.

In the late 1930s/early 1940s, science broadcasting became an area of institutional conflict. The Social Relations Division of the British Association for the Advancement of Science increasingly regarded science broadcasting as an activity it should have substantial influence over, and even control of.

BBC managers resisted, but nevertheless scientists did sometimes have substantial influence on programming through advisory and often informal arrangements. These arrangements allowed the BBC to maintain an appearance of independence from the world of science.

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